

Appendix 3A

1993 and 1996 Annexation Agreements

MCWRA/U.S. Army, 1993. Agreement No. A-06404 - Agreement between the United States of America and the Monterey County Water Resources Agency Concerning Annexation of the Fort Ord Into Zones 2 and 2A of the Monterey County Water Resources Agency, dated September 1993.

MCWRA/MCWD, 1996. Annexation Agreement and Groundwater Mitigation Framework for Marina Area Land, dated March 1996.

AGREEMENT NO. A-06404
AGREEMENT BETWEEN THE UNITED STATES OF AMERICA
AND THE
MONTEREY COUNTY WATER RESOURCES AGENCY
CONCERNING
ANNEXATION OF FORT ORD INTO ZONES 2 AND 2A
OF THE
MONTEREY COUNTY WATER RESOURCES AGENCY

This Agreement is entered into this 21st day of September, 1993, by and between the Government of the United States of America ("Government"), represented by the United States Army, and the Monterey County Water Resources Agency ("MCWRA"), a political subdivision of the State of California, represented by the Monterey County Board of Supervisors.

1. Purpose and Authority:

a. Purpose: The purpose of this agreement is to provide the terms and conditions under which the Fort Ord Lands will be annexed into the Zones.

b. Authority:

(1) By California law, the MCWRA is responsible for managing the surface water and groundwater resources in the Salinas Valley and providing flood control and water conservation services throughout Monterey County. The authority for the MCWRA to enter into this agreement is cited in California Water Code, Appendix 52-43 (Appendix "A"). The MCWRA has the authority to annex the Fort Ord Lands overlying the Seaside Basin based on a Memorandum Of Agreement between the MCWRA, the MPWMD, and the Pajaro Valley Water Management Agency, dated May 10, 1993 (Appendix "B").

(2) The authority for the Government to enter into this agreement was provided in Public Law 101-510 (National Defense Authorization Act for Fiscal Year 1991), Section 2101, dated November 5, 1990 and amended by Public Law 102-190 (National Defense Authorization Act for Fiscal Years 1992 and 1993), Section 2702, dated December 5, 1991. The funding for the Government to enter into this agreement was provided by Public Law 101-519 (Military Construction Appropriations Act, 1991), dated November 5, 1990.

2. Definitions:

a. United States Army Engineer District, Sacramento, California ("Corps"): A field operating agency of the Army Corps of Engineers, a major command of the Army; the agency that will execute this agreement on behalf of the Government;

b. Fort Ord: An existing Army installation in north Monterey County currently operating under the Army Forces Command; Fort Ord will realign to an enclave under provisions of Public Law 101-510 (Defense Base Closure and Realignment Act of 1990); on October 1, 1994, this installation will no longer be known as Fort Ord and will instead be known as the Presidio of Monterey Annex under the Army Training and Doctrine Command; disposal of excess Fort Ord property pursuant to Public Law 101-510 could begin before October 1, 1994 provided the Army has issued a Record of Decision on the Environmental Impact Statement for the Disposal and Reuse of Fort Ord; parts of Fort Ord were leased on a long term basis prior to the realignment decision;

c. Presidio of Monterey Annex ("POM Annex"): The proposed residual military mission enclave remaining on Fort Ord after its realignment; this annex shall continue operations in support of the Department of Defense and other federal agencies in the Monterey Peninsula area; the boundaries of the POM Annex should be finalized by early 1994;

d. Presidio of Monterey ("POM"): An existing Army installation in Monterey County operating under the Army Forces Command; on October 1, 1994, will be under the Army Training and Doctrine Command; POM is the home of the Defense Language Institute; POM will also be responsible for the proposed POM Annex;

e. Reserve Center ("RC"): An existing Army Reserve Center located on 12 acres of Fort Ord not contiguous to the POM Annex; the RC will remain after the realignment of Fort Ord;

f. Fort Ord Lands: A term denoting all lands within the existing boundaries of Fort Ord including: property needed to support the Army's future mission requirements (POM Annex and RC); property under a long term lease; property awaiting disposal either in a caretaker status or under an interim lease; and property already disposed;

g. Salinas Basin: The Salinas River Groundwater Basin; the Salinas Basin generally underlies the northwestern portion of Fort Ord;

h. Seaside Basin: The Seaside Groundwater Basin; the Seaside Basin generally underlies the southwestern portion of Fort Ord;

i. Monterey Peninsula Water Management District ("MPWMD"): A California Special District created by the State Legislature in 1978 having water management authority over the Seaside Basin;

j. Project: A future, long term, reliable, potable water system for the POM Annex/RC and other areas; the Project will provide at least 6,600 acre-feet per year which will permit all Salinas Basin wells on Fort Ord Lands to be shut down except during

SUBJECT: Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency

emergencies; stopping all pumping from the Salinas Basin on Fort Ord Lands is necessary to mitigate seawater intrusion; the MCWRA is currently developing such a Project to supply water to the Fort Ord Lands, Marina, Salinas, Toro Park, and perhaps other areas in north Monterey County; it is also possible that another water agency, district, utility, or purveyor could develop a smaller scale Project to supply water for just the Fort Ord Lands;

k. Project Implementation: The potable water system cited in paragraph 2.j. shall be considered "implemented" upon both the completion of construction and the delivery of potable water to POM Annex/RC from the completed water system;

l. Zones: Zones 2 and 2A of the MCWRA which are the zones of benefit for the MCWRA Nacimiento and San Antonio Dams, respectively.

3. Problem and Scope:

a. Fort Ord overlies two groundwater basins, the Salinas Basin and the Seaside Basin. See Appendix "C" for a map. Most of the installation's facilities and all of its potable wells overlie the Salinas Basin. The portion of the installation which overlies the Seaside basin has less development consisting mostly of family housing and recreational facilities. Fort Ord's only active well in the Seaside Basin is a non-potable well to irrigate the golf courses. Fort Ord's peak annual withdrawal from the Salinas basin from 1980 to 1992 was 6,600 acre-feet in 1984; and the peak withdrawal from the Seaside Basin from 1986 to 1989 was 424 acre-feet in 1989.

b. The Salinas Basin has had a problem with seawater intrusion since the 1940's. Seawater intrusion occurs when groundwater levels fall below sea level. This is caused by pumping more water out of an aquifer than is being recharged into it. Pumping by Fort Ord has contributed to this problem, but only to a limited extent as the Fort Ord pumping from the Salinas Basin from 1988 to 1992 averaged only 5,200 acre-feet per year and the estimated Salinas Basin overdraft (amount that pumping exceeds recharge) is about 50,000 acre-feet per year. Seawater intrusion has forced the abandonment of many wells along the coast, and required Fort Ord to relocate their well field inland in 1986. In contrast to the Salinas Basin, the Seaside Basin appears to be in a nearly balanced condition.

SUBJECT: Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency

c. Because of the magnitude of the seawater intrusion problem, a regional solution is needed. Without a regional solution, Fort Ord's remaining potable wells will eventually become contaminated by seawater. The MCWRA is developing a Project to provide a regional water supply system. The MCWRA is also developing the Castroville Sewage Reclamation/Irrigation Project. Both of these projects are intended to mitigate the effects of seawater intrusion in the Salinas Basin.

d. As long as there is an Army enclave on Fort Ord Lands, the Army will need a reliable potable water supply. In view of the limited life of Fort Ord's remaining potable wells, annexation is prudent because it will permit access to water produced by a future MCWRA project. Additionally, annexation will facilitate the disposal and reuse of Fort Ord Lands, and enhance the market value of any property which is sold. This is because, without annexation, the existing Salinas Basin overdraft could significantly limit the water rights of Fort Ord Lands except for the POM Annex/RC.

e. There have been questions raised over Fort Ord's right to withdraw groundwater from the Salinas Basin. Fort Ord/POM Annex/RC claim certain legal rights to the use of water from the Salinas Basin due to their federal status. However, the MCWRA claims limited regulatory authority over Fort Ord/POM Annex/RC's use of Salinas Basin water with respect to withdrawals of polluted or contaminated groundwater; and the MCWRA also claims ownership rights over water used by Fort Ord/POM Annex/RC which is released into the Salinas Basin from the Nacimiento and San Antonio Dams. Annexation and the terms of this agreement will clarify the water rights of both parties.

4. Terms and Conditions:

a. Execution of this agreement, which includes the Annexation Assembly and Evaluation Report (Appendix "D"), shall be deemed to be a petition by the Government, as the present owner of all Fort Ord Lands, to permit the annexation of the Fort Ord Lands by the MCWRA into Zones 2 and 2A. The MCWRA shall thereafter promptly commence proceedings for such annexation, and will diligently and in good faith pursue such annexation proceedings to completion.

b. The parties have discussed and agreed on payment of a fee by the Government totaling \$7,400,000, as authorized by Public Law 101-510 and appropriated by Public Law 101-519. The basis for this fee is discussed in section IV.F.1. of the attached Annexation

SUBJECT: Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency

Assembly and Evaluation Report. Fort Ord will be annexed into the Zones in consideration of the payment of the fee. The Government shall have no further financial responsibility or obligation of any kind to the MCWRA with respect to existing water project costs, e.g., Nacimiento and San Antonio Reservoirs. Further, the MCWRA releases the Government from any and all claims related to Fort Ord's groundwater withdrawals from the Salinas Basin prior to this agreement, and from any claims related to any Government action that may have caused or contributed to seawater intrusion in the Salinas Basin.

c. After execution of this agreement and until Project Implementation, Fort Ord/POM Annex/RC may withdraw a maximum of 6,600 acre-feet of water per year from the Salinas Basin, provided no more than 5,200 acre-feet per year are withdrawn from the 180-foot aquifer and 400-foot aquifer. The 6,600 and 5,200 acre-feet thresholds correspond to the annual peak (1984) and recent average (1988-1992) amounts of potable water Fort Ord has withdrawn from the Salinas Basin (does not include pumpage from the non-potable golf course well in the Seaside Basin). Groundwater withdrawals from the Salinas Basin by Fort Ord/POM Annex/RC for the purpose of environmental restoration shall not count toward the 6,600 and 5,200 acre-feet thresholds. Additionally, groundwater withdrawals from the non-potable golf course well shall not count toward the 6,600 and 5,200 acre-feet thresholds because this well is located in the Seaside Basin. The MCWRA agrees not to object to any Fort Ord/POM Annex/RC withdrawal under 6,600 acre-feet per year, except in compliance with California Water Code Appendix, Chapter 52, Section 22. If the MCWRA is concerned about a withdrawal, the MCWRA will first notify the Fort Ord/POM Annex Commander. The parties agree to make every effort to first resolve seawater intrusion disputes through mutual agreement. In any event, the MCWRA, after notice from the Fort Ord/POM Annex Commander, will not object to withdrawals in support of war, national emergency, contingency operation, troop mobilization, or unexpected mission requirements, and such withdrawals shall not count toward the 6,600 and 5,200 acre-feet thresholds. The Government will develop a water conservation program at Fort Ord/POM Annex/RC and will institute, in its discretion, measures to conserve water. The Government will participate in MCWRA water conservation initiatives and programs as mutually agreed by the parties.

d. Until Project Implementation, Fort Ord/POM Annex shall have exclusive ownership and operation of potable wells #24, #29, #30, #31, #32, Jacks well, and Pilarcitos well in the Salinas Basin, and the non-potable golf course well #1 in the Seaside Basin. See Appendix "C" for the locations of these wells. Jacks well, Pilarcitos well, and well #24 are inactive; well #32 has

SUBJECT: Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency

recently failed; and the rest are active. The MCWRA agrees not to object to Fort Ord/POM Annex/RC replacing any existing well or adding any new well on Fort Ord Lands subject to the conditions described in paragraph 4.c. above. Also until Project Implementation, Fort Ord/POM Annex/RC shall be the sole user of the aforementioned wells, provided that the Government, in its sole discretion, may permit the use of the Salinas Basin wells by others for use on Fort Ord Lands, or may provide water from the Salinas Basin wells to others on Fort Ord Lands in connection with any reuse plans. The Government shall retain all reasonable and necessary utilities and reserve all necessary easements to operate and maintain all Fort Ord/POM Annex/RC wells. After Project Implementation, Fort Ord/POM Annex shall retain ownership of the aforementioned wells, and the Government agrees to stop pumping from the Salinas Basin wells except for an emergency such as fire fighting or a situation as described at the end of paragraph 4.c. above. Project Implementation shall be no cause to curtail or stop pumping from any Seaside Basin well on Fort Ord Lands.

e. The Government will not pay any MCWRA assessments (such as standby charges, water delivery charges, water project assessments, etc.) until a MCWRA developed Project is implemented. This applies to not only the portions of Fort Ord retained by the Army, but also to any other portions of Fort Ord transferred to federal entities. See paragraphs 4.j.(3) and 4.j.(4) for a discussion of these future assessments.

f. The annexation into the Zones shall provide the Government with appropriate representation in Zone administration and decision making.

g. Should future litigation, regulation or other unforeseen action diminish the total water supply available to the MCWRA, the MCWRA agrees that it will consult with the Fort Ord/POM Annex Commander. Also, in such an event, the MCWRA agrees to exercise its powers in a manner such that Fort Ord/POM Annex/RC shall be no more severely affected in a proportional sense than the other members of the Zones.

h. If prior to Project Implementation, any Fort Ord/POM Annex well (including any located in the Seaside Basin) becomes contaminated with seawater, or is adversely affected by regulatory or legal action, the MCWRA shall cooperate with the Government in finding an interim water supply; shall assist the Government in any permit processes necessary to obtain such an interim water supply; and shall provide the same services to the Government as it would to any other municipal water supplier in the Zones under similar circumstances. The Government will bear the costs of obtaining

SUBJECT: Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency

such an interim water supply. Such costs will not include the cost of MCWRA staff time in providing services to the Government hereunder. The MCWRA will continue to monitor the rate of seawater intrusion, and will keep the Fort Ord/POM Annex Commander informed as to: the rate of seawater intrusion; the progress of plans for its Project; and the estimated remaining life of the Fort Ord/POM Annex wells. The MCWRA shall pass to the Fort Ord/POM Annex Commander any information they may obtain related to the continuing yield of Fort Ord/POM Annex wells located in the Seaside Basin.

i. As part of the disposal of Fort Ord, the Government is considering transferring the ownership and operation of the Fort Ord wells and water distribution system to a successor water purveyor, utility, or agency. Under such a transfer, the MCWRA agrees that the Government, in its sole discretion, may transfer its applicable water rights under this agreement to the successor water purveyor, utility, or agency. The MCWRA also agrees not to object to such a successor obtaining or developing a water supply from outside the Salinas Basin for the Fort Ord Lands.

j. If the opportunity arises and it is in the Government's best interests, the Government, in its sole discretion, may participate in a Project developed by an organization other than the MCWRA. In any event, Government participation in a MCWRA developed Project would be contingent on the following:

(1) The MCWRA shall, upon Project Implementation, continue to provide water and related services to Fort Ord/POM Annex/RC and shall provide for Government representation in MCWRA decisions affecting Fort Ord/POM Annex/RC, and in MCWRA's administration of the Project.

(2) The water allocation to be made available to POM Annex/RC from the Project shall be based only on the water needed to support the Army's future, long term mission requirements, or as otherwise agreed to by the parties. By the time of Project Implementation, all excess Fort Ord Lands should have been disposed. The water allocation to be made available to the disposed property from the Project shall be an issue between these property owners and the MCWRA.

(3) The capital cost for the Project shall be distributed among all properties within the Zones in an equitable manner. The Government would favorably consider a funding plan similar to the MCWRA's proposed funding plan for the Castroville Sewage Reclamation/Irrigation project in which approximately 50 percent of the capital cost is funded by the MCWRA members receiving the water, and 50 percent is funded by other members in

SUBJECT: Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency

the Zones. An acceptable funding plan will also require that the capital cost paid by each member receiving water from the Project generally be proportional to their water allocation from the system. In any funding plan, the Government will reserve the right to pay the capital cost through either periodic assessments, or by a lump sum amount. The Government does not intend to be a party to any agreement in which military appropriations fund an inequitable portion of the capital cost of the Project. The \$7,400,000 annexation fee shall not count toward the Government's share of the Project's capital cost.

(4) The MCWRA's cost to operate and maintain (O&M) the Project should be distributed on the basis of water usage or allocation. If the MCWRA proposes to distribute O&M costs on the basis of property area, then the Government only intends to pay such an assessment and any applicable standby charges on the Fort Ord Lands needed to support Army missions, i.e., POM Annex and RC. The Government will not pay O&M assessments or standby charges for any Fort Ord property in a caretaker status awaiting disposal. Any federal entities which have acquired portions of Fort Ord will not pay standby charges on property which is unsuitable for development.

(5) Prior to either the initiation or commitment of any military appropriations to the Project by the Government, the MCWRA shall complete all appropriate feasibility studies and environmental reviews. With respect to only Fort Ord Lands under Army control, participation in the Project, or any other water supply project is subject to compliance with applicable federal laws and regulations, e.g., Army Regulation 420-41 and Federal acquisition regulations; and subject to final review and approval by the Government.

(6) As Fort Ord/POM Annex/RC will, upon Project Implementation, rely on the MCWRA's ability to provide potable water, the MCWRA shall defend the rights of Fort Ord/POM Annex/RC to a water supply upon implementation of the Project as though those rights were its own.

5. Funding:

a. The Government hereby obligates, pursuant to section 2702 of Public Law 102-190, \$7,400,000 for the annexation fee, the basis of which is set forth in Appendix D, section IV.F.1. Upon completion of the annexation, the Government shall make payment to the MCWRA in the amount of \$7,400,000.

SUBJECT: Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency

b. The \$7,400,000 annexation fee shall be the maximum Government payment in consideration for the annexation of the Fort Ord Lands and the execution of this agreement.

c. The parties recognize that this agreement is subject to the availability of funds provided by Congress.

6. Duration of Agreement:

a. If the Government decides to participate in a Project developed by an organization other than the MCWRA pursuant to paragraph 4.j. of this agreement, the MCWRA agrees to either terminate this agreement or negotiate modifications to it if so requested by the Government.

b. In the event the Army ends its presence at Fort Ord, the MCWRA agrees to either terminate this agreement or negotiate modifications to it if so requested by the Government.

c. If Fort Ord has not been annexed to the Zones by September 30, 1995, the MCWRA agrees to either terminate this agreement or negotiate modifications to it if so requested by the Government.

d. If the MCWRA has not achieved reasonable progress by December 31, 1999, toward implementation of a MCWRA developed project; or a MCWRA developed Project has not been implemented by December 31, 1999, and the Government is not convinced that the MCWRA can achieve Project Implementation within a time frame deemed reasonable by the Government, then the MCWRA agrees to either terminate this agreement or negotiate modifications to it if so requested by the Government.

e. In the event this Agreement is terminated before the annexation has been completed, the MCWRA, in its sole discretion, may continue with the annexation; however, in such circumstance, the Government shall not make any payment for such annexation. In the event this agreement is terminated after the Fort Ord Lands have been annexed into the Zones, the Government will not demand return of the payment. In the event this agreement is terminated by the Government pursuant to any of the above conditions, the MCWRA agrees not to file any claim against the Government related to the termination.

SUBJECT: Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency

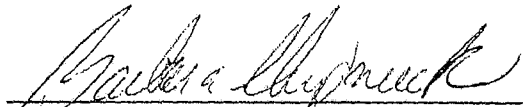
7. Binding on Successors: This agreement shall be binding upon and shall inure to the benefit of the non-federal successors and assigns of the Government's interest in the property now known and referred to as Fort Ord, California, except that this agreement shall not exempt any such non-federal successor or assign, whether of fee title or some lesser interest in the property, from any ordinance or other regulation enacted by the MCWRA or from any assessment, charge, tax, or other monetary exaction levied by the MCWRA. All such non-federal successors and assigns shall be subject to regulation and be subject to assessment, charge, tax, or other monetary exaction to the extent allowed by law at the time such enactment or levy is in effect.

FOR THE UNITED STATES
OF AMERICA

FOR THE MONTEREY COUNTY
WATER RESOURCES AGENCY



Acting Assistant Secretary
of the Army for Installations,
Logistics and Environment



Monterey County
Board of Supervisors

9/10/93
Date

September 21, 1993
Date

Appendices:

- A - California Water Code, Appendix 52-43
- B - Addendum No. 1 to the Memorandum Of Agreement Between the MCWRA, the Monterey Peninsula Water Management District, and the Pajaro Valley Water Management Agency
- C - Location of the Existing Wells
- D - Annexation Assembly and Evaluation Report

§ 52-43. Annexation to zones

Sec. 43. (a) In addition, or as an alternative, to the procedures for amending zones described in Section 7, any territory in the agency lying within the watershed within which a zone is situated may be annexed to that zone pursuant to this section. Territory which is in, or annexed to, one zone may be annexed to another zone pursuant to this section.

(b) The following applies with respect to the annexation of new territory to any zone pursuant to this section:

(1) (A) A petition for annexation by election signed by 25 percent of the freeholders residing in the territory proposed to be annexed as shown by the last equalized assessment roll of the county shall be presented to the board.

(B) The petition shall designate specifically the boundaries of the territory proposed to be annexed and its assessed valuation as shown by the last equalized assessment roll and shall ask that the territory be annexed to the zone. The petition shall be accompanied by a bond in the sum of not less than one hundred dollars (\$100), to be approved by the board and filed with the clerk of the board as security for the payment by the petitioners of the reasonable cost of the election on annexation, in the event that at the election less than a majority of the votes cast are in favor of annexation. The petition shall be verified by the affidavit of one of the petitioners.

(C) The petitioner shall be published by the petitioners for at least two weeks preceding its hearing in a newspaper of general circulation published in the zone, if there is one, or, if not, in a newspaper of general circulation published in the agency, together with a notice stating the number of signers of the petition, the time when the petition will be presented to the board and that all persons interested may appear and be heard. It shall not be necessary to publish the names of the signers.

(D) At the time specified for the hearing, the board shall hear the petition and may adjourn the hearing from time to time. Upon final hearing of the petition, the board, if it approves the petition as originally presented or in a modified form, shall make an order describing the exterior boundaries of the territory proposed to be annexed and ordering that an election be held in such territory for the purpose of determining whether or not the territory shall be annexed to the zone. The order shall fix the day of the election, which shall be within 60 days from the date of the order, and shall show the boundaries of the territory proposed to be annexed to the zone and shall set forth the measure to be submitted to the voters of such territory and shall designate the precincts, polling places and election officers for such election and state the times between which the polls shall be open. The order shall be published pursuant to Section 6066 of the Government Code. This order shall be entered in the minutes and is conclusive evidence of a due presentation of a proper petition, and of the fact that each of the petitioners was, at the time of the signing and presentation of the petition, qualified to sign.

(E) The election shall be held and conducted as provided in Chapter 1 (commencing with section 22000) of Part 1 of Division 12 of the Elections Code and sample ballots and polling place cards shall be mailed as provided in section 10012 of the Elections Code. If a majority of the votes in the territory proposed to be annexed at an election called therein by the board for that purpose are in favor of the annexation, the clerk of the board shall make and cause to be entered in the minutes and endorsed on the petition an order approving the petition and the petition shall be filed. The entry is conclusive evidence of the fact and regularity of all prior proceedings of every kind required by law and of the facts stated in the entry. The board at its next regular meeting after the entry shall, by an order, alter the boundaries of the zone and annex to it the territory described in the petition. The order of the board is conclusive evidence of the validity of all prior proceedings leading up to the annexation and recited in the order, and from and after the order the territory is part of the zone. If, at the election, less a majority of the votes in a territory proposed to be annexed are in favor of the annexation of the territory to the zone, the signers of the petition shall, within 10 days after the canvassing of the votes of the election, pay to the board the reasonable cost of the election and, if not paid within 10 days, the board may sue on the bond to recover the cost of the election. If the result of the election is against annexation, the board shall, by order, disapprove the petition and enter the order in its minutes. No other proceeding shall be taken in relation thereto until the expiration of six months from the presentation of the petition, except to collect the costs of the election.

(2) (A) A petition for annexation without election signed by the owners of real property in the territory proposed to be annexed which real property represents at least 75 percent of the total assessed valuation of real property in the territory as shown by the last equalized county assessment roll, shall be presented to the board.

(B) The petition shall designate specifically the boundaries of the territory and the assessed valuation of real property therein as shown by the last equalized county assessment roll and shall show the amount of real property owned by each of the petitioners and its assessed valuation as shown by the last equalized county assessment roll. The petition shall ask that the territory be annexed to the zone. The petition shall be verified by the affidavit of one of the petitioners.

(C) The petition shall be published by petitioners at least two weeks preceding the hearing in a newspaper of general circulation published in the zone, if there is one, or, if not, in a newspaper of general circulation published in the agency. With the petition there shall be published a notice stating the number of signers of the petition, the time when the petition will be presented to the board and stating that all persons interested may appear and be heard. It shall not be necessary to publish the names of the signers. A printed copy of the petition and notice as so published shall be mailed pursuant to Sections 53520 to 53523, inclusive, of the Government Code.

(D) At the time designated the board shall hear the petition and any person interested, and may adjourn the hearing from time to time. Upon the hearing of the petition, the board shall determine whether or not it is in the best interests of the zone and the territory that the territory be annexed to the zone and the board may modify the boundaries of the territory proposed to be annexed as set forth in the petition by decreasing the area of the territory. If the board upon final hearing determines that it is in the best interests of the zone and of the territory proposed to be annexed that the territory be annexed, it shall make an order describing the boundaries of the territory proposed to be annexed and shall alter the boundaries of the zone and annex to it the territory described in the petition and the territory is then a part of the zone.

(3) A petition for annexation without election signed by 100 percent of the owners of real property in the territory proposed to be annexed may be presented to the board. The petition shall designate specifically the boundaries of the territory and shall ask that the territory be annexed to the zone. The petition shall be verified by the affidavit of one of the petitioners. The board shall determine, upon reviewing the petition, whether or not it is in the best interest of the zone and the territory that the territory be annexed to the zone. The board may modify the boundaries of the territory proposed to be annexed as stated in the petition by decreasing the area of the territory. If the board determines that it is in the best interest of the zone and of the territory proposed to be annexed that the territory be annexed, the board shall make an order describing the boundaries of the territory proposed to be annexed and shall alter the boundaries of the zone and annex to it the territory described in the petition, and the territory is then a part of the zone.

(4) No petition or request for annexation pursuant to paragraphs (1) to (3), inclusive, may be accepted by the board if a zone annexation petition involving any of the same territory is pending before it for annexation to the same zone.

(5) An order for annexation may be by ordinance or resolution. Whenever any new territory is annexed to a zone, the territory thereupon becomes subject to all the liabilities and entitled to all the benefits of the zone. Any order for annexation may provide for, or be made subject to, the payment of a fixed or determinable amount of money for the acquisition, transfer, use, or right of use of all or any part of the existing property, real or personal, of the zone. The board may provide that payment of the amounts shall be either: (1) in lump sums or (2) in semiannual installments with interest thereon at a rate not to exceed 12 percent over a period not to exceed 10 years beginning on July 1 following the next succeeding March 1. If the payment is in semiannual installments, the board shall provide in the ordinance that the total of each sum to be paid by each parcel shall constitute a lien on the parcel as of noon on the next succeeding March 1, the same as the lien for general agency and zone taxes; that the semiannual installments shall be paid and collected at the same time and in the same manner and by the same persons as, and together with and not separately from, general agency and zone taxes and shall be delinquent at the same time and thereafter subject to the same thereafter sell, lease, or otherwise dispose of the property in the manner prescribed by law for counties.

(Stats.1990, c. 1159 (S.B.2580), § 41.)

Historical and Statutory Notes

Derivation: Former § 52-31, enacted by Stats.1947, c. 699, § 31.

A

ADDENDUM NO. 1 TO
MEMORANDUM OF AGREEMENT BETWEEN
THE MONTEREY COUNTY WATER RESOURCES AGENCY,
THE MONTEREY PENINSULA WATER MANAGEMENT DISTRICT AND
THE PAJARO VALLEY WATER MANAGEMENT AGENCY

This is Addendum No. 1 to the memorandum of agreement (MOA) between and among the Monterey County Water Resources Agency (MCWRA), the Monterey Peninsula Water Management District (MPWMD) and the Pajaro Valley Water Management Agency (PVWMA), dated December 15, 1991. The date of this addendum for reference purposes is September 28, 1992.

RECITALS

This addendum to the MOA is entered into in light of the following facts:

A. MCWRA is developing a Seawater Intrusion Program (SIP) to mitigate the effects of seawater intrusion into the groundwater basin along the coast under Ft. Ord, Marina, and the Castroville area. This program has been in the planning stages for several years. As part of this program, it has been proposed that pumping from existing groundwater wells supplying Fort Ord and the Marina County Water District (MCWD) be curtailed or eliminated, the construction of additional wells in the seawater intrusion area be limited or prohibited, and a replacement potable water supply be provided to Fort Ord and the MCWD by MCWRA, from wells to be constructed in the Salinas Valley. In order to control pumping from existing wells, MCWRA may acquire the existing wells. MCWRA may at some time seek to levy assessments within the subject area, to impose charges for water provided to the subject area, and to raise revenues from within the subject area in other ways, in order to operate, maintain, and improve the SIP in that area. MCWRA decisions on whether to proceed with this project will be made in the future.

B. MPWMD has an interest in this part of the SIP, in that part of Fort Ord and adjacent areas are within MPWMD's boundaries. Nevertheless, MPWMD does not wish to participate in the SIP, and does not wish to impede its implementation.

C. The impending closure of Ft. Ord calls for additional coordination among the three parties to this MOA.

D. The Board of Directors and/or Board of Supervisors of the Monterey County Water Resources Agency has requested changes in the original MOA.

(MOA.ADD - 3/15/93)

- 1 -

APPENDIX B

AGREEMENTS

1. Consent to project within territory of Ft. Ord. The parties hereto agree that MCWRA may carry out the SIP within the territory presently occupied by Fort Ord and northwards along the coast, may acquire existing wells drawing water from the Salinas Valley and other property within the territory, may provide water to the territory in connection with the SIP, and may exercise any regulatory authority within that territory as may be needed in connection with the SIP and may levy assessments and impose charges in connection with the SIP for water provided within such territory, without any further compliance with the terms of the MOA, notwithstanding that any part of such territory may be located within the boundaries of MPWMD.

2. Future expansion of MPWMD boundaries. If MPWMD boundaries are expanded to include additional territory involved in the SIP, MPWMD will not object to the continued operation of the SIP in that area.

3. Coordination of programs and activities in connection with closure of Fort Ord. The MCWRA, FVWMA, and MPWMD will coordinate programs related to the closure of Fort Ord and will cooperate in the implementation of future developments within the Fort Ord area. In anticipation that a portion of the future water delivery system to the Fort Ord area will be located within the MPWMD area and that the water supply for that system will be developed from the MCWRA area which is outside of the MPWMD area, the MPWMD and the MCWRA will comply with one another's ordinances as follows:

(a) The MCWRA shall have exclusive authority to regulate water delivery systems that deliver water to the area that is both within the present Fort Ord boundaries and within the MPWMD boundaries in existence at the time of the regulation, and the MPWMD will comply with any such ordinance enacted by the MCWRA.

(b) The MPWMD shall have exclusive authority to regulate the management of the Seaside groundwater basin within the present Fort Ord boundaries, and the MCWRA will comply with any such ordinance enacted by the MPWMD.

(c) This Memorandum of Agreement does not commit the MCWRA to provide any specific quantity of water to Fort Ord or to any portion of it, nor does it commit the MCWRA to provide any water to Fort Ord from the Salinas Valley Groundwater Basin. It also does not give to another agency the authority to compel provision of water to Fort Ord.

4. Deletion of paragraph 18. Paragraph 18 is deleted from the original MOA.

(MOA.ADD - 3/15/93)

5. Deletion of paragraph 19. Paragraph 19 is deleted from the original MOA.

IN WITNESS WHEREOF, the parties execute this memorandum of agreement as follows:

MONTEREY COUNTY WATER RESOURCES AGENCY:

Dated: May 25, 1993

By *Anthony J. E. Roca*
Chair, Board of Supervisors

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT:

Dated: 15 APRIL 1993

By *Benjamin D. Dwyer*
Chair, Board of Directors

PAJARO VALLEY WATER MANAGEMENT AGENCY:

Dated: 7/14/93

By *Edward J. Kelly III*
Chair, Board of Directors

* * * * *

Approved as to form:

William K. Rorty
Counsel for MCWRA
Dated: 5/6/93

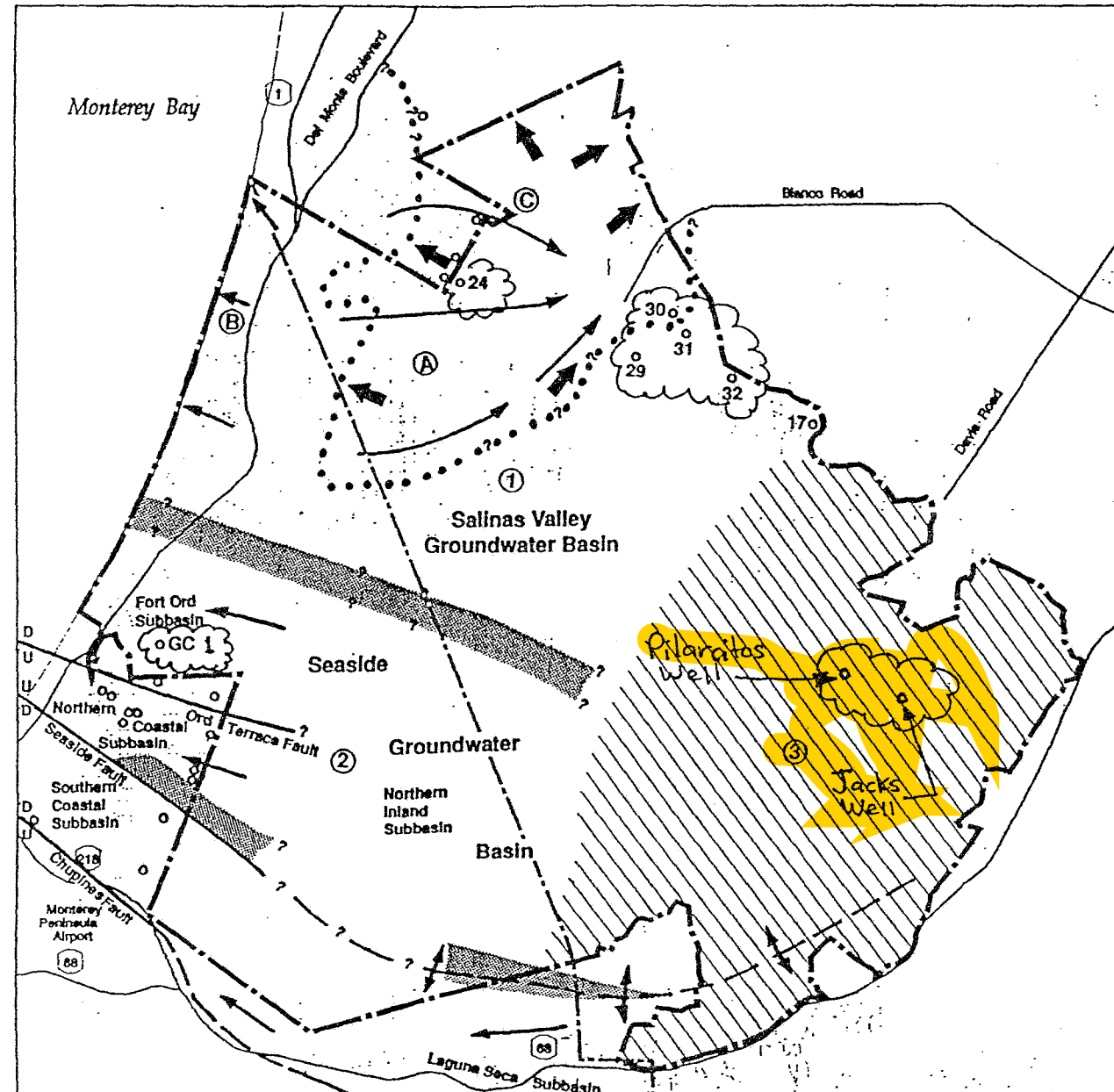
Approved as to form:

Abel C. Laredo
Counsel for MPWMD and PVWMA
Dated: April 7, 1993

(MOA.ADD - 2/17/93)

Hydrogeologic Conditions in the Fort Ord Vicinity

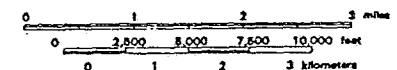
APPENDIX D

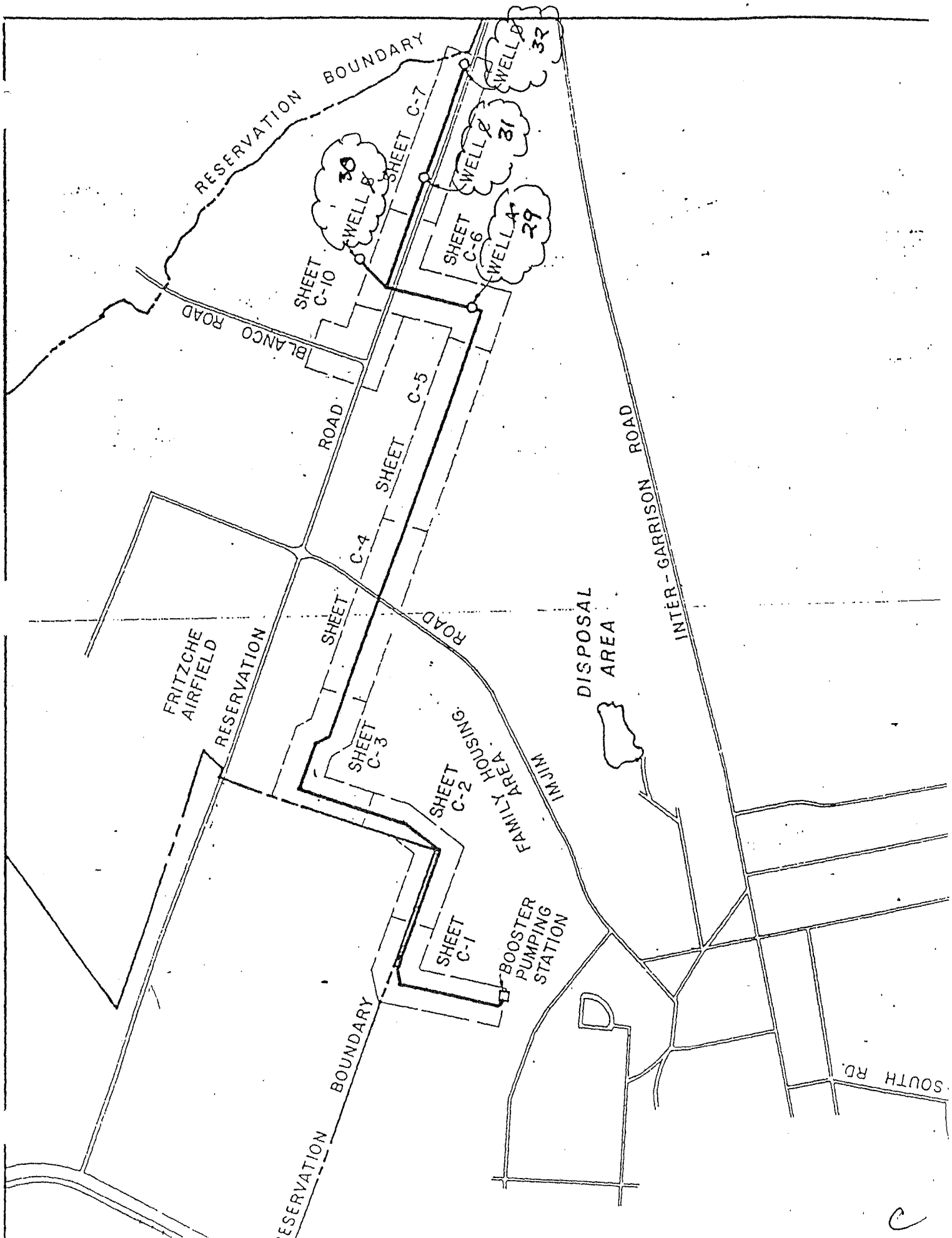


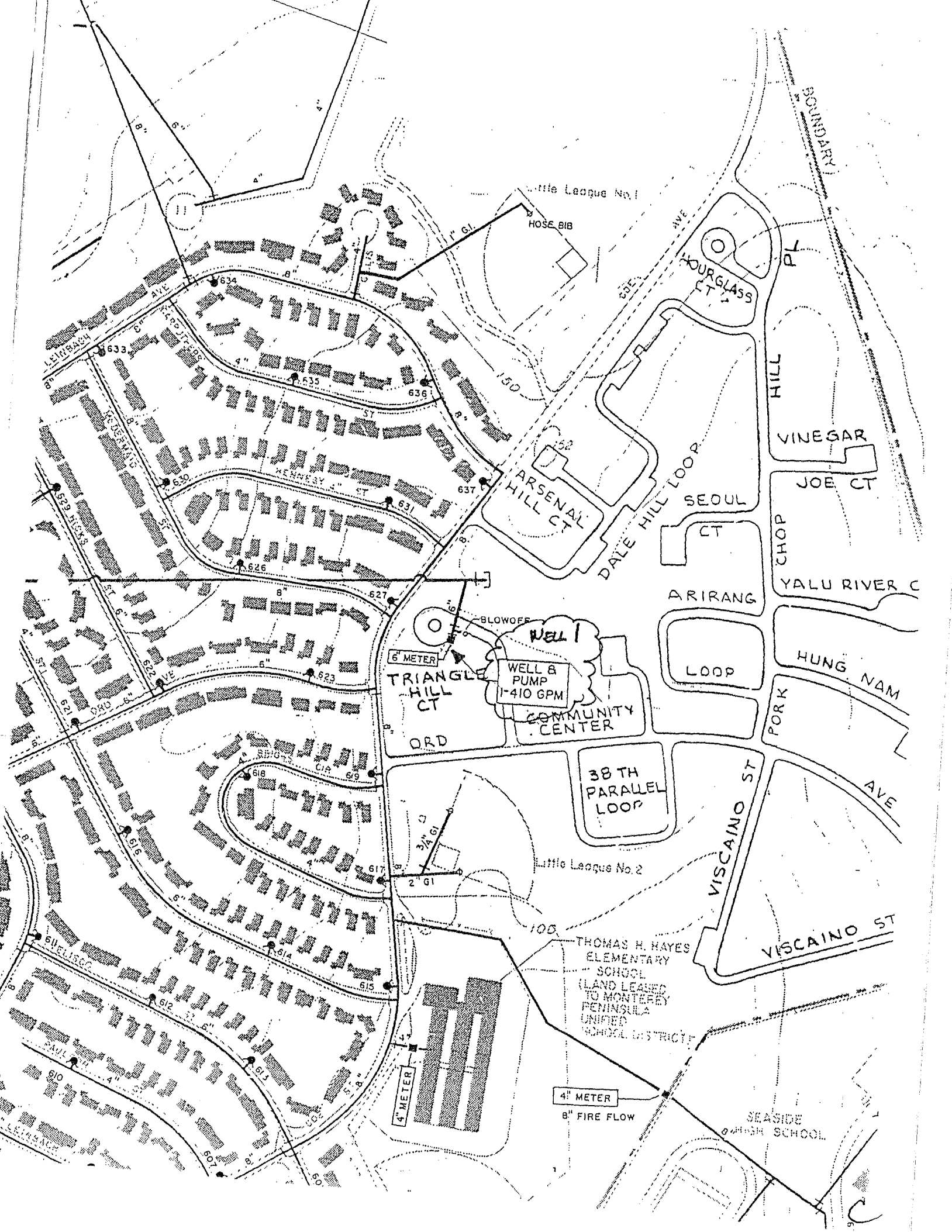
- Monterey Peninsula Water Management District jurisdiction boundary
- Fort Ord boundary
- U
D --- Fault. Dashed where approximately located. Queried where unknown. D=down; U=up.
- ↕ --- Anticline. Dashed where approximately located. Queried where unknown.
- • • • Boundary of Salinas Valley Aquiclude Queried where unknown.
- Direction of groundwater flow
- ➔ "A" aquifer.
- ➔ 180-foot and 400-foot aquifers in Area 1. Paso Robles and Santa Margarita Formations in Area 2.
- ➔ Buried bedrock ridge or anticline that forms a barrier to groundwater flow. Queried where unknown.
- ① Hydrogeologic area within Fort Ord. Area 3 shaded.
- Locations of known groundwater contamination on Fort Ord
- (A) Main landfill
- (B) Main Garrison sewage treatment plant
- (C) Fritzsche Army Airfield burn pit
- ☼ Municipal supply wells (well number indicated for Fort Ord wells)

Source: Harding Lawson Associates pers. comm.

Scale 1:60,000







ANNEXATION ASSEMBLY AND EVALUATION REPORT
FOR THE ANNEXATION OF FORT ORD
BY THE
MONTEREY COUNTY WATER RESOURCES AGENCY
10 SEPTEMBER 1993

I. EXECUTIVE SUMMARY. The purpose of this annexation by the Monterey County Water Resources Agency (MCWRA) is to provide the basis for a long term, reliable, potable water supply to support the Army's residual mission at Fort Ord after it is realigned per the Base Closure and Realignment Act of 1990. Annexation will also facilitate the disposal and reuse of the portions of Fort Ord not needed to support the Army's residual mission. This report provides the background and justification for the annexation, which is contingent on the conditions in the accompanying Agreement. See Exhibit 1 for a regional map showing Fort Ord, and Exhibit 2 for the location of cities surrounding Fort Ord.

II. INTRODUCTION.

A. Overview of Annexation.

1. Fort Ord, like all large communities in North Monterey County, obtains all of its water supply from groundwater. From the map at Exhibit 3, it can be seen that the northwestern part of Fort Ord (Area 1) overlies part of the Salinas Valley Groundwater Basin (Salinas Basin). Within Area 1, there are three aquifers known as the 180-foot, 400-foot, and 900-foot aquifers. These aquifers are not necessarily found in every location of Area 1. Presently, Fort Ord has three active potable wells in the 180-foot and 400-foot aquifers of the Salinas Basin (wells 29, 30, and 31). By California law, the MCWRA has water management authority over the Salinas Basin. The Salinas Basin has been in an overdraft condition for many years.

2. The southwestern part of Fort Ord (Area 2 on the map) overlies the Seaside Groundwater Basin (Seaside Basin), which is divided into several subbasins due to geologic conditions. The part of Fort Ord which overlies the Seaside Basin supplies a substantial amount of recharge to this basin. Presently, Fort Ord has only one active well in the Seaside Basin to irrigate the Fort Ord golf courses (well 1). Due to occasional high salinity, water from this well is considered to be non-potable. By California law, the Monterey Peninsula Water Management District (MPWMD) has water Management authority over the Seaside Basin. In contrast to the Salinas Basin, the Seaside Basin appears to be in a nearly balanced condition.

3. In the eastern part of Fort Ord (Area 3 on the map), the boundary between the Salinas and Seaside Basins is not defined. This is not a significant issue since this area has a low

infiltration rate and subsurface permeability. As a result, the area is unsuitable for significant groundwater development, and it probably doesn't contribute a substantial amount of recharge to the western basins.

4. Pumping by Fort Ord has contributed to the Salinas Basin overdraft, but only to a limited extent as the Fort Ord withdrawals from 1988 to 1992 averaged only 5,200 acre-feet per year compared to the estimated Salinas Basin overdraft of about 50,000 acre-feet per year. The overdraft has resulted in the intrusion of seawater into the Salinas Basin which has caused the contamination of many wells along the entire coastal region, including several on Fort Ord. Although recent studies show that the rate of seawater intrusion may have slowed in the Fort Ord area, the seawater is continuing at a rapid pace in the Castroville-Salinas area several miles north of Fort Ord. Exhibit 4 shows the seawater intrusion problem. The MCWRA has requested the annexation of all of Fort Ord as part of its long term effort to halt all pumping along the Salinas Basin coastal region by providing a replacement water supply. In this manner, the seawater intrusion could be stopped and perhaps even reversed.

5. Fort Ord realized that the seawater intrusion would eventually contaminate its remaining wells, so in January 1990 the President requested Congress approve a military construction project for \$7,400,000 to "Purchase part of a regional water supply system, as the first phase of a two-phase regional water supply project to provide a dependable long-term water supply for Fort Ord and the cities of Marina and Castroville." The fiscal year 1991 Defense legislation provided a \$7,400,000 authorization and appropriation for the annexation of Fort Ord into the MCWRA. Additional funds for the Army's share of the regional water supply project (second phase) were never budgeted because the 1991 Defense Base Realignment and Closure process (BRAC 91) dictated that the 7th Light Infantry Division stationed at Fort Ord relocate to Fort Lewis, Washington. As a consequence, the Army deferred action on the annexation until the future status of Fort Ord was determined, and more information was available on the cost for the Army to participate in a regional water supply project.

6. Pursuant to BRAC 91, part of Fort Ord will be retained to support the Defense Language Institute (DLI) at the nearby Presidio of Monterey (POM). This Fort Ord enclave is designated as the POM Annex. Additionally, a 12 acre Reserve Center within Fort Ord will be retained (not contiguous to the POM Annex). As part of the BRAC 93 process, the Army recommended that the POM and POM Annex be closed, and the DLI be relocated to Fort Huachuca, Arizona. However, the 1993 Defense Base Closure and Realignment Commission's recommendations, which the President endorsed to Congress, call for the DLI to remain at the POM, and for the POM Annex to be downsized to only include housing and the commissary, child care facility, and post exchange. Congress is not expected to disapprove the Commission's recommendations.

7. With a BRAC 93 decision to retain an Army presence at Fort Ord, it is imperative that the Army obtain a reliable water supply to support the residual mission. For the Army to gain access to a regional water supply project being developed by the MCWRA, annexation is required. Annexation will also benefit the Army by facilitating the disposal and reuse of the parts of Fort Ord to be excessed. More detail on these and other benefits is provided in section IV.E. of this report.

B. Area to be Annexed. The area to be annexed is the whole of Fort Ord, California, which is made up of 28,602.84 acres. Refer to Exhibits 14 through 18 for real estate maps of the installation.

C. Purpose of the Area and Mission Objectives. Prior to BRAC 91, Fort Ord's primary purpose was to station the 7th Light Infantry Division. Subsequent to BRAC 93, the installation's primary purpose will be to provide housing and other facilities in support of the nearby POM and Naval Post Graduate School.

D. Present and Future Uses of the Property. Relocation of the 7th Light Infantry Division is in progress with the last units scheduled for departure by December 1993. Pursuant to BRAC 91, the Army is disposing of excess property in accordance with applicable law. To support the residual mission, the POM Annex is presently configured to occupy about 1,500 acres. However, under BRAC 93, the POM Annex is to be downsized by excessing facilities such as both golf courses. The Environmental Impact Statement for the disposal and reuse of Fort Ord, which is nearing completion, has identified the following possible uses for the parts of Fort Ord to be excessed: educational, office park (private and government), commercial, recreational, aviation, natural resource management, and housing.

E. Acquisition Origin of Fort Ord. The original Fort Ord reservation comprising 15,809.50 acres was purchased by the United States from the David Jacks Corporation on 4 August 1917. After 1940, an additional 12,793.34 acres were acquired. The total area is 28,602.84 acres.

F. Political Subdivision Seeking Annexation. The subdivision seeking annexation of all the lands comprising Fort Ord is the MCWRA which, per California law, is responsible for managing the surface water and groundwater resources in the Salinas Valley and providing flood control and water conservation services throughout Monterey County. MCWRA is requesting that Fort Ord be annexed into Zones 2 and 2A. The MCWRA established Zone 2 as the benefit assessment zone in connection with the construction of Nacimiento Reservoir (completed in 1957), and established Zone 2A as the benefit assessment zone in connection with the construction of San Antonio Reservoir (completed in 1967). Since the construction of these reservoirs, the MCWRA has operated a groundwater recharge program for the benefit of Zones 2 and 2A, using waters from the

two reservoirs and other programs to enhance natural percolation in the Salinas Basin. It is appropriate for Fort Ord to be annexed into Zones 2 and 2A because Fort Ord's potable water supply has historically come from the Salinas Basin. Per a Memorandum of Agreement signed in May 1993 between the MPWMD and MCWRA, the MPWMD does not object to the MCWRA annexing that part of Fort Ord overlying the Seaside basin provided that the MPWMD retains water management authority over the portion of the Seaside Basin underlying Fort Ord. Refer to Exhibit 19 for a large map showing the existing boundaries of Fort Ord and Zones 2 and 2A. Note that although a small portion of Fort Ord is currently shown to be within Zones 2 and 2A, the property is not presently annexed. Refer to Exhibit 20 for a large map showing the entire area of Zones 2 and 2A.

III. LEGAL STATUS OF THE PROPERTY

A. Title Held by the Government. The Army has a fee title interest in the property proposed for annexation. This action by the MCWRA will not affect the Army's title.

B. Degree of Legislative Jurisdiction. The degree of jurisdiction over most of the property is exclusive federal jurisdiction. Annexation will not alter this jurisdiction and it will not interfere with official Army activities or functions including those remaining after realignment and closure.

C. Applicable State Annexation Laws and Ordinances. The procedures for annexation are found in California Water Code, Appendix 52-43 (see Appendix A to the Agreement). The Army intends to petition the MCWRA Board of Supervisors for annexation pursuant to section 43.(b)(3). Pursuant to section 43.(b)(5), annexation may require a fee. See section IV.F. of this report for a discussion of the annexation fee.

D. Regulations on Annexation. The following govern the actions of the Army in annexations:

1. Army Regulation 405-25, Annexation (1 April 1974).
2. Engineering Regulation 405-1-12, Chapter 9, Federal Legislative Jurisdiction and Annexation (Change 4, 5 September 1978).

IV. POTENTIAL IMPACT OF ANNEXATION.

A. Source of Utilities. Water is the only utility that will be affected by the proposed annexation. Fort Ord now receives all of its water from wells on Fort Ord that are owned and operated by the Army. Since seawater intrusion is threatening these wells, the Army needs a long term, reliable, replacement water supply. Such

a water supply would likely come from a future MCWRA project; however, the Agreement provides the Army with the flexibility to obtain a replacement water supply from another source if the opportunity arises and it is in the Army's best interests. The replacement water supply system will provide water in bulk to the installation. The Army or a successor entity will continue to be responsible for operating and maintaining the water distribution system on Fort Ord Lands. Paragraph 4.d. of the Agreement addresses the fact that the Army will retain the necessary easements to operate and maintain Army wells.

B. Adverse Impacts on the Mission.

1. Utilities and Services. Annexation will have no impact on Fort Ord utilities and services, or the installation's plan to find a water purveyor to take over the water distribution system.

2. Taxation and Licensing. Municipalities acquire the power to tax private persons and private property by annexation. Military personnel, to some extent, and Government instrumentalities such as Post Exchanges are exempt from such taxation. The Agreement states that the Army will provide the MCWRA with \$7,400,000 in consideration for the annexation. However, the Agreement also stipulates that the Army will not pay any MCWRA assessments (including standby charges) until after the POM Annex and Reserve Center gain access to a replacement water supply provided by the MCWRA (see paragraph IV.F.2.). To the extent that federal property may be exempt from local assessments, a utility service contract in accordance with AR 420-41 between the Army and the MCWRA may require the payment of a contractual fee to replace any assessments. Such fee will be mutually agreed upon.

C. Effect on Installation Master Plans. Upon annexation, the MCWRA will acquire some control over Fort Ord's water supply. From a practical standpoint, this control should not prevent the Army from constructing any projects needed to support Fort Ord's residual mission. Additionally, the Agreement provides Fort Ord with special rights to obtain any water needed in the event of war, national emergency, contingency operation, troop mobilization, or unexpected mission requirements.

D. Annexor's Capability to Furnish Benefits.

1. The main benefit the Army expects to receive from the MCWRA is a long term, reliable water supply. Based on its charter, the MCWRA should be the most capable organization to plan, finance, construct, and operate a regional water supply system. The MCWRA's first attempt to develop a water supply system for Fort Ord and Marina was halted in 1992 due to opposition from land owners in and around the proposed Buena Vista well field (located inland from Fort Ord). This project had a capacity of 11,600 acre-feet/year.

2. An alternative project now being studied by the MCWRA consists of dispersed wells along a 20 mile stretch of the Salinas River and storing excess runoff from the Arroyo Seco River (a tributary of the Salinas River) in a shallow aquifer using percolation ponds. Water would then be pumped from the dispersed well system and from the shallow aquifer to replace the potable wells serving Fort Ord, Marina, Salinas, Toro Park, and perhaps other areas in north Monterey County. Water would also be provided to recharge the Salinas Basin near the coast to raise the groundwater level and halt (or even reverse) the seawater intrusion. The Water Transfer Project is being planned for a capacity of about 50,000 acre-feet per year. Construction completion is planned by the year 2000. The MCWRA's current estimated cost of this project is \$157 million, which equates to a capital cost of \$3,155 per acre-foot per year.

3. There is another MCWRA project to mitigate seawater intrusion which is already under design. The project will upgrade the existing regional sewage treatment plant to tertiary standards, and pipe the effluent to Castroville for crop irrigation. This project should provide about 19,500 acre-feet per year, and is estimated to cost \$71 million. When this project comes on line (maybe as early as 1996), the estimated 50,000 acre-feet per year Salinas Basin overdraft will be significantly reduced. This should extend the life of all wells near the coast, including those on Fort Ord. The MCWRA intends to use the Army's \$7.4 million annexation fee to complete design of the Castroville Project.

4. Based on the above reasons, it is concluded that the MCWRA is the most capable organization to provide a reliable water supply for the Fort Ord Lands. This is a challenging task as the MCWRA is under considerable pressure to develop a regional water supply project quickly because the wells serving over 100,000 people in the coastal region are being threatened by seawater intrusion. Because of this threat, the State Water Resources Control Board is monitoring the MCWRA's progress in this area. If the MCWRA, for whatever reason, is unable to develop a regional water supply system, then the Agreement permits the Army to obtain a long term water supply for the POM Annex and Reserve Center from another party. Additionally, even if the MCWRA is making progress in developing a regional water supply project, the Agreement provides the Army the option of obtaining a long term water supply for the POM Annex and Reserve Center from another party if it is in the Army's best interests, e.g., the other water source is less costly or available at a more advantageous time.

E. Benefits to Accrue from Annexation. Upon annexation of Fort Ord into Zones 2 and 2A, the MCWRA will not immediately provide any direct governmental service on the installation. The benefits of annexation will accrue initially on an indirect basis, and direct services will be provided later. The benefits to the Army from annexation are as follows:

1. The most important benefit of annexation is that it will allow the Fort Ord Lands to gain access to a regional water supply project being developed by the MCWRA. Fort Ord's existing wells are being threatened by seawater intrusion due to the existing Salinas Basin overdraft. The MCWRA is the most capable, and most likely entity to implement a regional water supply project to support the POM Annex and Reserve Center.

2. Another important benefit is that annexation will facilitate the disposal and reuse of the parts of Fort Ord to be excessed under base closure and realignment. This is the main reason for annexing all Fort Ord Lands at this time instead of waiting to annex just the POM Annex and Reserve Center after the MCWRA has better defined its proposed regional water supply project, i.e., all environmental permits and approvals obtained. Under the Agreement, the new owners of Fort Ord excessed property would have the right to drill and pump on their property subject to the conditions described in paragraph IV.E.3. below, and paragraph 4.c. of the Agreement. Also, property which has already been annexed by the MCWRA will be easier to dispose because of its potential access to a long term water supply project being developed by the MCWRA, and a short term water supply from Fort Ord's existing wells (see paragraph IV.E.3. below). Without annexation, the MCWRA or state regulatory agencies could object to the Army providing water to owners of excessed Fort Ord property, even if only for a short duration. Additionally, these same agencies could severely limit or control pumping by the owners of excessed Fort Ord property due to the Salinas Basin overdraft. Lastly, even if all of these new property owners wanted to be annexed, it would be an administrative burden for the MCWRA compared to annexing just Fort Ord.

3. Until the MCWRA's regional water supply project is implemented, annexation will give the Army the right to withdraw up to 6,600 acre-feet per year from the Salinas Basin underlying Fort Ord Lands, and allow the Army to allocate some of this water for reuse. The Army or its successor water purveyor, utility, or agency may also develop groundwater supplies located outside the Salinas Basin. The amount of water needed to support the Fort Ord residual mission was the subject of a June 1993 Report titled "Water Requirements at Fort Ord Under Base Realignment and Closure", which was prepared under the supervision of the Army Corps of Engineers, Institute for Water Resources (IWR). This report concluded that the POM Annex, as presently configured, would require in fiscal year 1995 1,085 acre-feet of potable water provided that additional water conservation measures are implemented. This report also estimated that 403 acre-feet of non-potable water would be used in fiscal year 1995. The non-potable water is pumped for the golf courses from a well located in the Seaside Basin. These requirements would decrease if the POM Annex is downsized in accordance with BRAC 93. Based on a POM Annex potable water requirement of 1,429 acre-feet per year (IWR estimate plus appropriate adjustments computed by Fort Ord), there could be

up to 5,171 acre-feet per year of water available for reuse and to maintain any undisposed Fort Ord Lands and facilities in a caretaker status. Note that the Agreement only allows 5,200 of the 6,600 acre-feet per year threshold to be pumped from the 180-foot and 400-foot aquifers in the Salinas Basin. Fort Ord's active potable wells draw from the 180-foot aquifer, so a new well into the 900-foot aquifer would be needed to gain access to the additional 1,400 acre-feet per year. The Agreement also states that Fort Ord groundwater withdrawals for environmental restoration will not count toward the 6,600 acre-feet per year threshold because either the withdrawals will be small, or if they are large, the water will probably be disposed in the sanitary sewer system where it will be used by the Castroville Sewage Reclamation/Irrigation Project to help reduce seawater intrusion.

4. There is concern that the Fort Ord wells could become contaminated with seawater before the MCWRA implements their regional water supply project. In this event, annexation would be a benefit to the Army because the MCWRA will provide Fort Ord with the same services as they would provide to any other municipal water supplier in the Zones under this circumstance, i.e., assistance in finding an interim water supply and in obtaining any permits. The Army would bear the cost of obtaining this interim water supply. Under the Agreement, the MCWRA will periodically provide Fort Ord with the estimated remaining life of their wells, and the progress on the MCWRA Water Transfer Project.

5. Annexation will resolve questions concerning Fort Ord's right to withdraw groundwater from the Salinas Basin. The Agreement states that in consideration of the \$7,400,000 annexation fee, the MCWRA will release the Government from any financial responsibility for existing MCWRA water projects from which Fort Ord may have benefitted (Nacimiento and San Antonio Reservoirs). Additionally, the Agreement states the MCWRA will release the Government from any claims related to seawater intrusion in the Salinas basin.

6. Under California law, annexation will provide the Fort Ord with the same representation in MCWRA matters as any other property owner in Zones 2 and 2A.

7. Another benefit of annexation is that the enclosed Agreement includes some of the conditions which must be satisfied for the Army to participate in a future MCWRA regional water supply project. The objective of these conditions is to assure that the regional water project costs assigned to the Army are equitable in comparison to the Army's allocation of water from the project. These protections are very important in view of the fact that the Army believed it was being saddled with a disproportionate cost share of the original Buena Vista project, and the fact that the POM Annex will only require a small part of the capacity of MCWRA's proposed regional water project. The Army strongly believes that part of the cost of a regional water project must be funded by all

members of Zones 2 and 2A. The water supply project is just as important to halting seawater intrusion as the Castroville Sewage Reclamation and Irrigation project, and the MCWRA plans to have 50 percent of this project funded by Zone 2 and 2A members not receiving water from the Castroville project.

F. Effect on the Budget of the Installation.

1. Annexation Fee: The Army and the MCWRA have agreed upon an annexation fee of \$7,400,000, which was authorized and appropriated by Congress in the fiscal year 1991 Defense legislation. The amount of the fee is related to the benefits provided by MCWRA's existing water projects (Nacimiento and San Antonio Dams) and water management practices which protect the yield of the Salinas Basin. It is from this basin that Fort Ord has historically obtained its potable water supply. The annexation fee is consistent with the current MCWRA Annexation Policy at Exhibit 5. There are two components of the fee - for area and water use. The area component is the area to be annexed in acres times \$277. The \$277 is the sum of the present worth capital cost of each dam divided by the acreage of its respective zone. The water use component is \$783 times the maximum amount of water to be pumped from the Salinas Basin in acre-feet per year. The \$783 is the present worth, on a acre-foot per year basis, of past operation and maintenance costs for Zones 2 and 2A. Based on information from current and former Fort Ord personnel, it appears that MCWRA's current annexation policy was in effect when the Congressional budget estimate for the annexation fee was developed in 1989. The area component of the fee was apparently computed by using 8,000 acres multiplied by \$277/acre or \$2,216,000. Since the existing Fort Ord developed area is about 5,000 acres, the 8,000 acre figure was apparently used to account for future growth. The water use component apparently was developed using the peak withdrawal of 6,600 acre-feet/year (1984) multiplied by \$783/acre-foot/year or \$5,167,000. The area and water use components total \$7,383,800, which was rounded to \$7,400,000. The Agreement stipulates that the \$7,400,000 fee will be paid to the MCWRA after completion of the annexation.

2. Annual Assessments: The Agreement stipulates that until the POM Annex and Reserve Center receive water from a MCWRA water supply project, the Army shall not pay any assessments such as standby charges, water delivery charges, or water project assessments. Standby charges, which generally fund the MCWRA administrative costs, vary from year to year and have increased over time. At present, these charges are limited to a maximum of \$15 per acre per year for each zone, per the California Water Code, Appendix 52-12. For the POM Annex and the Reserve Center, which after annexation will be in two zones (2 and 2A), this would amount to a maximum of \$30 per acre. The Army's potential water project assessments (capital costs) and water delivery charges (operation and maintenance) are discussed in Agreement paragraphs 4.j.(3) and

4.j.(4), respectively. The Agreement stipulates that the Army will not pay any assessments or charges on Fort Ord property in a caretaker status awaiting disposal. Additionally, paragraph 7 of the Agreement provides the MCWRA with expanded authority to collect assessments from Fort Ord property leased to private interests by the Army.

V. POSITION OF COUNTY AND OTHER GOVERNMENT ENTITIES ON ANNEXATION.

A. MCWRA. The MCWRA initiated the annexation of Fort Ord to help solve the Salinas Basin seawater intrusion problem, and guarantee a continuing supply of potable water for Fort Ord. Annexation is a necessary step in this process. The MCWRA is moving toward annexing all property within the Salinas Basin so they can effectively manage the aquifer. With the annexation of Fort Ord and Marina, which are both in progress, all major properties within the Salinas Basin will be annexed.

B. Other Political Subdivisions. Letters were sent by the MCWRA to other communities and agencies that share boundaries with Fort Ord or have an interest in the annexation of Fort Ord by the MCWRA. The respondents, with their comments, are listed below. A sample copy of the letter is attached (Exhibit 6), as well as copies of the responses.

1. City of Monterey, CA; voted not to oppose annexation (Exhibit 7).

2. Monterey County Local Agency Formation Commission; voted to support (Exhibit 8).

3. Marina Coast Water District (formerly known as the Marina County Water District); voted not to oppose annexation (Exhibit 9). The Marina Coast Water District is currently working with the MCWRA to be annexed into zones 2 and 2A because of their concerns over the long term reliability of their existing groundwater supply.

4. Monterey Peninsula Water Management District; approved the annexation (Exhibit 10).

5. City of Del Rey Oaks, CA; voted not to oppose annexation (Exhibit 11).

6. City of Marina, CA; initially voted to table consideration of support or opposition to the annexation. The City of Marina has subsequently agreed not to oppose annexation provided that the Agreement stipulates that Fort Ord may pump up to 6,600 acre-feet of water per year from its wells, and that water not needed for the residual mission can be provided for reuse (Exhibit 12). This provision is contained in paragraph 4.c. of the Agreement.

7. City of Seaside, CA; opposes the annexation (Exhibit 13). It is concluded that in spite of this opposing response, Fort Ord should be annexed by the MCWRA. The first reason is that annexation under the terms of the attached Agreement is in the Army's best interest. The second reason is that the Army concludes there is no reasonable basis for a conflict because the Seaside groundwater supply, which is managed by the MPWMD, will not be affected by the MCWRA's annexation of Fort Ord.

VI. CONCLUSION AND RECOMMENDATIONS. This annexation is in the best interests of the Government, and it is recommended that it be approved contingent on the provisions in the attached Agreement.

EXHIBITS:

- 1 - Regional map
- 2 - Vicinity map
- 3 - Map of the Salinas Valley Groundwater Basin
- 4 - Figures showing the seawater intrusion problem
- 5 - MCWRA annexation policy
- 6 - Typical MCWRA letter sent to local interests to obtain comments on the MCWRA's proposed annexation of Fort Ord
- 7 - Response, City of Monterey
- 8 - Response, Monterey County Local Agency Formation Commission
- 9 - Response, Marina Coast Water District
- 10 - Response, Monterey Peninsula Management District
- 11 - Response, City of Del Rey Oaks
- 12 - Response, City of Marina
- 13 - Response, City of Seaside
- 14 - Fort Ord real estate map, entire installation
- 15 - Fort Ord real estate map, segment 1A
- 16 - Fort Ord real estate map, segment 1B
- 17 - Fort Ord real estate map, segment 1C
- 18 - Fort Ord real estate map, segment 1D
- 19 - Map showing boundaries of Fort Ord and Zones 2 and 2A
- 20 - Map showing entire Zones 2 and 2A

REPORT TO THE BOARD OF SUPERVISORS OF THE
MONTEREY COUNTY WATER RESOURCES AGENCY

COPY

SUBJECT	BOARD MEETING DATE	AGENDA NUMBER
APPROVE AND AUTHORIZE THE CHAIR TO SIGN THE AGREEMENT AND ANNEXATION RESOLUTION OUTLINING THE TERMS AND CONDITIONS TO ANNEX FORT ORD INTO MONTEREY COUNTY WATER RESOURCES AGENCY ZONES 2 AND 2A	* 9-21-93 10:50 AM	
WATER RESOURCES AGENCY		

RECOMMENDATION

Approve and authorize the Chair to sign the Agreement and Annexation Resolution outlining the terms and conditions to annex Fort Ord into Monterey County Water Resource Agency Zones 2 and 2A.

SUMMARY

The United States Army has presented the Monterey County Water Resources Agency (MCWRA) with a petition to be annexed into MCWRA's Zones 2 and 2A. The petition includes an Agreement covering the terms and conditions for the annexation (copy attached). On September 13, 1993 the MCWRA Board of Directors received the Agreement and voted to recommend it be approved by your Board. Since the Agreement has been signed by the authorized representative for the Army, your Board's approval and signature by your Board Chair on the Agreement and Annexation Resolution will complete the annexation action and obligate the Army to a payment of \$7.4 million to the MCWRA.

DISCUSSION

- ✓ On July 10, 1990 the Monterey County Board of Supervisors, acting then for the Monterey County Flood Control and Water Conservation District, authorized the Chair of the Board of Supervisors to sign a Memorandum of Agreement (MOA) that contained the terms and conditions for the annexation of Fort Ord into MCWRA Zones 2 and 2A. The MOA was never co-signed by the Army at that time because it did not address the closure of Fort Ord.
- ✓ On April, 1993 Army officials on Fort Ord submitted an MOA to the MCWRA for approval. This MOA was approved by the Board of Supervisors on April 20, 1993. When this version of the MOA was received by Army officials in Washington DC, it was rejected on the grounds that it did not sufficiently address the down-sizing of Fort Ord or the Installation's future reuse.

The MOA was changed to an "Agreement" and re-written by Army officials in the Pentagon. The Agreement as is now being presented preserves the key components of the earlier MOA and more completely addresses the Army's declining presence on Fort Ord. It establishes a total cap on groundwater pumping from the Salinas Groundwater Basin, quantifies the amount of water the Army will need for their residual presence and quantifies the amount of water that will be available for civilian reuse.

Approval of the Agreement and the Annexation Resolution by the Board of Supervisors at this time will complete the annexation. The Army will become contractually obligated to pay the agreed annexation fee of \$7,400,000 upon being presented with the signed Agreement and Annexation Resolution.

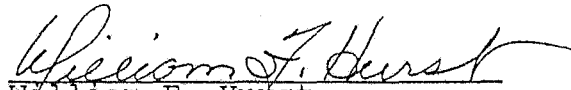
The Agreement consists of the Petition for Annexation and Appendices A, B, C, and D. Exhibits to Appendix D, are available upon request at the offices of the MCWRA.

OTHER AGENCY INVOLVEMENT

In August of 1992 the MCWRA sent a letter to all the Communities surrounding Fort Ord and to other agencies that might be affected by the annexation of the Fort into MCWRA Zones 2 and 2A. The letter indicated the MCWRA's intent to pursue the annexation and it asked the addressees to indicate their support or opposition to the intended action. A summary of the responses is shown on pages 10 and 11 of Appendix D, the Annexation Assembly and Evaluation Report. In addition, on September 9, 1993 the Fort Ord Reuse Group wrote a letter to the Army in support of the annexation.

FINANCING

There is no impact to the General Fund. After annexation, the MCWRA would receive \$7.4 million from FY 1991 Military Construction Army appropriated funds. The full amount is scheduled to be applied against the costs of the Castroville Reclamation and Irrigation Project.


William F. Hurst
General Manager

*Before the Board of Supervisors in and for the
County of Monterey, State of California*

COPY

Agreement No. A-06404 --)
Agreement Between the United States of)
America and the Monterey County Water)
Resources Agency Concerning Annexation of)
Fort Ord Into Zones 2 and 2A of the Monterey)
County Water Resources Agency, Approved;)
Chairwoman Authorized to Sign)

Upon motion of Supervisor Johnsen, seconded by Supervisor Strasser Kauffman, and carried, the Board hereby approves Agreement No. A-06404 between the United States of America and the Monterey County Water Resources Agency concerning annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency, and authorizes the Chairwoman to sign said agreement.

PASSED AND ADOPTED this 21st day of September, 1993, by the following vote, to-wit:

AYES: Supervisors Salinas, Shipnuck, Perkins, Johnsen and Karas.

NOES: None.

ABSENT: None.

I, ERNEST K. MORISHITA, Clerk of the Board of Supervisors of the County of Monterey, State of California, hereby certify that the foregoing is a true copy of an original order of said Board of Supervisors duly made and entered in the minutes thereof at page ___ of Minute Book 67, on September 21, 1993
Dated: September 21, 1993

ERNEST K. MORISHITA, Clerk of the Board
of Supervisors, County of Monterey,
State of California.

By Nancy Lukerbill Deputy

*Before the Board of Supervisors in and for the
County of Monterey, State of California*

Resolution No. 93-387 --)
A Resolution of the Board of Supervisors)
of the Monterey County Water Resources)
Agency Making findings for the Annexation)
of Certain Territory, Known as the Ft. Ord)
Annexation, to Zones 2 and 2A of the)
Monterey County Water Resources Agency,)
Setting Forth the Conditions for Said)
Annexation, and Approving Said Annexation.)

WHEREAS,

- A. For many years, the territory known as Ft. Ord, in Monterey County, California, has obtained its potable water from the Salinas Valley Groundwater Basin.
- B. Much of the water in the Salinas Valley Groundwater Basin is derived from the Groundwater recharge program made possible through the operation of Lake Nacimiento and Lake San Antonio. The dams that impound these lakes were built and are operated by the Monterey County Water Resources Agency (MCWRA). The capital, operating and maintenance expenses of these reservoirs have been paid for by the property owners in MCWRA Zones 2 and 2A.
- C. Ft. Ord is not in Zones 2 and 2A, and has never paid any of the assessments for the reservoirs, although it has benefited from the groundwater recharge program maintained by Zones 2 and 2A.
- D. Over the years, seawater intrusion has progressively advanced into the northern portions of the Salinas Valley Groundwater Basin, rendering wells useless for potable and agricultural purposes and threatening nearby water supplies. Several wells previously used to supply water to Fort Ord have been lost to seawater intrusion.
- E. The MCWRA proposes to develop a seawater intrusion program that would replace groundwater wells in the northern portion of the Salinas Valley. The program would rely on groundwater or surface water developed in Zones 2 and 2A. The program would require that all properties to be benefited by the program be in Zones 2 and 2A.
- F. The territory of Fort Ord is not in Zone 2 and 2A. The U. S. Government, as owner of said property, desires that the territory of Fort Ord be annexed to Zones 2 and 2A, in order to compensate Zones 2 and 2A for past benefits received and to insure the territory's right to participate in the seawater

intrusion program, should a water project be built in Zones 2 and 2A for the benefit of this area.

- G. The proposed annexation is not a project within the meaning of CEQA because (1) the terms of the annexation limit the use of water on Ft. Ord to present or historical levels of water use, pending the completion of a water supply project for the benefit of this area, and (2) the annexation does not commit the MCWRA or Ft. Ord to the development of any particular water project or to any other action that will result in changes in the environment. Therefore, it can be seen with certainty that there is no possibility that the annexation will result in significant environmental effects.
- H. This annexation is conducted pursuant to the Monterey County Water Resources Agency Act, Section 43.

NOW, THEREFORE BE IT RESOLVED:

1. It is in the best interest of Zones 2 and 2A and the territory described in Exhibit A, referred to herein as the Ft. Ord annexation, that the territory described in Exhibit A be annexed to the zones.
2. The boundaries of the territory to be annexed, as set forth in Exhibit A, are appropriate and need not be modified.
3. There are no other annexation petitions pending before the Agency that involve annexation of any of the same territory to the same zones.
4. The territory described in Exhibit A is hereby annexed to Monterey County Water Resources Agency Zones 2 and 2A, subject to the conditions set forth in the annexation agreement, attached hereto as Exhibit B. The annexation fee shall be paid as provided in Exhibit B.
5. The annexation shall take effect immediately upon the adoption of this resolution.
6. On the effective date of the annexation, the territory described in Exhibit A shall be subject to all the liabilities and entitled to all the benefits of the zone, except as otherwise provided in the annexation agreement, attached hereto as Exhibit B.

Upon motion of Supervisor Johnsen, seconded by Supervisor Karas, the foregoing resolution is adopted this 21st day of September, 1993, by the following vote, to-wit:

AYES: Supervisors Salinas, Shipnuck, Perkins, Johnsen and Karas.

NOES: None.

ABSENT: None.

I, ERNEST K. MORISHITA, Clerk of the Board of Supervisors of the County of Monterey, State of California, hereby certify that the foregoing is a true copy of an original order of said Board of Supervisors duly made and entered in the minutes thereof at page --- of Minute Book 67, on September 21, 1993
Dated: September 21, 1993

ERNEST K. MORISHITA, Clerk of the Board
of Supervisors, County of Monterey,
State of California.

D. Sanbill

PETITION FOR ANNEXATION
TO ZONES 2 AND 2A
MONTEREY COUNTY WATER RESOURCE AGENCY
MONTEREY COUNTY, CALIFORNIA

AFFIDAVIT

I, the undersigned, declare under penalty of perjury under the laws of the State of California that the attached Memorandum of Agreement with attachments, when executed by the parties thereto, constitutes a petition for the annexation of the territory of Fort Ord, in Monterey County, California, to Zones 2 and 2A of the Monterey County Water Resource Agency, Monterey County, California, by 100 per cent of the owners of the land described therein, and I am informed and believe that the information contained therein is true and correct.

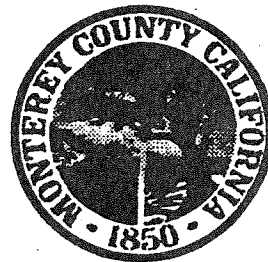
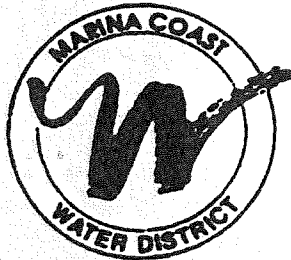
Dated:

9/10/93

Michael W. Owen
Signature

Name: MICHAEL W. OWEN

Title: Acting Assistant Secretary of the Army
(Installations, Logistics and Environment)



Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands

March 1996

**ANNEXATION AGREEMENT AND GROUNDWATER MITIGATION FRAMEWORK
FOR
MARINA AREA LANDS**

EXECUTIVE SUMMARY

PURPOSE--Groundwater Planning. This Agreement and Framework provides for annexing lands in the Marina area to MCWRA Zones 2 and 2A, the benefit assessment zones for the Nacimiento and San Antonio reservoirs. The Agreement and Framework establishes a groundwater mitigation framework process for the lands to be annexed, and provides money from the Marina area for Basin management planning.

ANNEXATION TO ZONES 2 AND 2A--MCWD, Armstrong, Lonestar. Annexation proceeds under section 7 of the MCWRA Act for lands within the service area of MCWD, and lands owned by Armstrong and Lonestar. Annexation of the MCWD service area was effective immediately upon approval by the MCWRA Board of Supervisors. The Armstrong Ranch annexation will be effective when LAFCO approves concurrent annexation to MCWD and the City of Marina on conditions satisfactory to Armstrong (including recordation of a final subdivision map). The Lonestar annexation will take effect when the Lonestar Property is annexed to MCWD.

Annexation Fees--more than \$3,500,000. Annexation fees are based on \$277/acre of land annexed, and \$783/af of water to be used. The fee for land on which water is not used is \$27.70/acre. The fee for agricultural water is \$261/af. Annexation fees total more than \$3,500,000, plus interest, as follows:

Fees for MCWD are \$2,449,410, based on 1,750 acres @ \$277/ac. and 3,020 afy of water @ \$783/af, and a credit of \$400,000 already paid by MCWD for groundwater management planning.

Fees for Armstrong will be about \$970,000 for Area A (urban), based on 900 acres @ \$277/ac. and 900 afy @ \$783/af, and an amount subject to final determination upon actual annexation for Area B (irrigated and unirrigated agriculture). If the annexation of the Armstrong Ranch occurs more than seven years after MCWRA approves the Annexation Agreement, Armstrong will pay the then-current annexation fees. If the agricultural water use on Area B of the Armstrong Ranch changes, Armstrong will pay an additional 2/3 of the then-current water charge portion of the annexation fee, and if water is used on any area annexed as unirrigated, Armstrong will pay an additional 9/10 of the then current land charge.

Fees for Lonestar will be \$166,621, based on 104 acres using water @ \$277/ac., and 264 acres of unirrigated, vacant land @ \$27.70/ac., and 500 afy of water with quality below agricultural standards @ \$261/af. If Lonestar's use changes to a potable use, or if Lonestar is supplied water from the MCWD or has water available from the BMP, or if Lonestar uses water on the open-space area, Lonestar will pay the other two-thirds of the water charge.

Payments for MCWD, Armstrong and Lonestar may be in a lump sum, or in installments over 10 years from the date of annexation, with 6% annual interest.

Annexation fees will be dedicated to paying costs of a BMP process that includes benefits for the Marina Area, and for management and protection of the deep aquifer.

Annual Assessments. After annexation, Marina area lands will pay annual assessments for MCWRA Zones 2, 2A and 2Z.

GROUNDWATER LIMITS--4,440 AFY

Pumping Limits. Under the Agreement and Framework, the present MCWD service area is limited to 3020 afy of potable groundwater. Non-agricultural use of Basin groundwater on the Armstrong Ranch is limited to 920 afy, 20 afy when the Agreement and Framework becomes effective, an additional 150 afy upon annexation, and additional increments of 150 afy every two years thereafter. Groundwater underlying approximately 730 acres of the Armstrong Ranch is limited to agricultural use, except that 20 afy can be used for potable uses, and water from that area can also be used at the regional treatment plant. Lonestar will limit its pumping to its current use of 500 afy.

Reclaimed Water Management. MCWD has the right to receive tertiary treated water from the SVRP plant. MCWD will defer taking summer flows of more than 300 afy (all summer flows if a reservoir is built). MCWD will take its entitlement over 300 afy from winter flows, and plan to store the water for use in the summer. MCWD will pay MCWRA for each acre-foot of reclaimed water received from the SVRP, with the price determined each year by a formula.

Water Storage Site. Armstrong will reserve not more than 250 acres of land for the MCWD for a possible water storage site, subject to planning and CEQA compliance. Armstrong will donate the land over about 12 years, as Armstrong's entitlement to potable groundwater use increases in 150 afy increments, or MCWD can acquire land as needed by paying \$25,000 per acre (which can be recovered in Armstrong's fees to annex land to MCWD). MCWD, MCWRA, the City of Marina (and MRWPCA, if it signs the Addendum) agree not to take any more land on the Armstrong Ranch, except for specified, limited purposes. Armstrong has reserved well

sites to irrigate Area B and to provide water for MRWPCA's regional treatment plant.

Alternate Water Supplies--300 afy of new water.

BMP. MCWRA's BMP planning will include consideration of the Marina area for a Basin alternative to groundwater pumping in the Marina area.

MCWD. MCWD will continue to plan for new water supplies, such as wastewater reclamation and desalination, to replace and supplement groundwater pumping.

Deep Aquifer Management. MCWRA and MCWD will manage the 900' aquifer to protect and preserve it and to sustain a secure water supply source for MCWD.

Water Source for Fort Ord. MCWD's deep wells may be used to provide up to 1400 afy of water already allocated to Fort Ord as part of the Fort Ord annexation to Zones 2 and 2A.

CONSERVATION. MCWD's aggressive water conservation program will continue in the Marina area.

EQUAL TREATMENT. The MCWRA will not impose greater restrictions on the Marina area's water use from the Basin than are imposed on water use or supply for use within the City of Salinas.

MRWPCA ADDENDUM. The Addendum attached to the Agreement and Framework as Exhibit "G" would provide for MRWPCA to join the Agreement and Framework on terms which would include possible acquisition of a buffer zone for the Regional Treatment Plant, and agreement to the other terms of the Agreement and Framework.

TABLE OF CONTENTS

	<u>Page</u>
1. PURPOSE AND AUTHORITY.	1
1.1. Purpose.	1
1.2. Authority.	1
2. DEFINITIONS AND DESIGNATIONS.	1
2.1. Parties.	1
2.1.1. Marina Coast Water District ("MCWD").	1
2.1.2. Monterey County Water Resources Agency ("MCWRA").	1
2.1.3. J. G. Armstrong Family Members ("Armstrong").	1
2.1.4. RMC Lonestar ("Lonestar").	1
2.1.5. City of Marina ("City").	2
2.2. AFY.	2
2.3. Agency Act.	2
2.4. Armstrong Ranch.	2
2.5. Basin.	2
2.6. BMP.	2
2.7. CEQA.	2
2.8. CSIP.	2
2.9. Effective Date.	2
2.10. Exhibits.	2
2.11. FEIR.	3
2.12. Fort Ord.	3
2.13. Lonestar Property.	3
2.14. Marina Area.	3
2.15. MCWD Water Plans.	3
2.16. MCWRA/MRWPCA Agreement.	3
2.17. Mitigation Plan.	3
2.18. Mitigation Plan Implementation.	3
2.19. Agreement and Framework.	3
2.20. Monterey Regional Water Pollution Control Agency ("MRWPCA").	3
2.21. MRWPCA Annexation Agreement.	3
2.22. 1990 Agreement.	3
2.23. SVRP.	3
2.24. Zones.	4
3. FACTS AND CIRCUMSTANCES.	4
4. REQUEST FOR ANNEXATION.	5
4.1. Request by MCWD, Armstrong, and Lonestar.	5
4.2. Request by MCWD.	5
4.3. Request by Armstrong.	6

TABLE OF CONTENTS
(Continued)

	<u>Page</u>
4.4. Request by Lonestar.	6
4.5. Effect of Request.	6
5. TERMS AND CONDITIONS--MCWD.	6
5.1. Quantity limitations on MCWD's groundwater pumping.	6
5.2. No objection by MCWRA to MCWD withdrawals except pursuant to section 22 of Agency Act.	7
5.3. Management of 900-foot aquifer.	7
5.4. Compliance with CEQA and other applicable laws.	7
5.5. MCWD development of alternative water supplies.	7
5.6. MCWD payment to MCWRA for tertiary treated water.	7
5.7. MCWD right to receive tertiary treated water from MRWPCA plant.	8
5.8. Effective date of annexation.	8
5.9. Annexation fee.	9
5.9.1. Amount of MCWD annexation fee.	9
5.9.2. Credit.	9
5.9.3. Payment of annexation fee.	9
5.10. MCWD use of revenues prior to full payment of annexation fee.	9
6. TERMS AND CONDITIONS--ARMSTRONG.	10
6.1. Ranch Areas.	10
6.2. Effective Date of Annexation.	10
6.3. Participation by Armstrong in MCWD water sources.	10
6.4. Prerequisites to annexation to MCWD and the City of Marina.	10
6.5. Annexation fee.	10
6.6. Payment of annexation fee in lump sum.	11
6.7. Payment of annexation fee in installments.	12
6.8. Costs, assessments, fees and charges.	12
6.9. Quantity limitations on Armstrong water use.	13
6.10. Reservation of lands for MCWD.	13
6.10.1. MCWD Reserved Area	13
6.10.2. Gift by Armstrong or payment by MCWD.	15
6.10.3. Waiver of further acquisitions by MCWD, MCWRA, and City of Marina; liquidated damages.	16

TABLE OF CONTENTS
(Continued)

	<u>Page</u>
6.11. Annexation of portions of Armstrong Ranch used by MCWD.	17
7. TERMS AND CONDITIONS--LONESTAR.	17
7.1. Compliance with Agency Act Section 22.	17
7.2. Quantity Limitations.	17
7.3. Annexation of Lonestar Property to the Zones.	17
7.4. Annexation fee.	18
7.4.1. Amount of original annexation fee.	18
7.4.2. Choice of lump sum or installment.	18
7.4.3. Lump sum payment.	18
7.4.4. Installment payments.	18
7.4.5. Additional annexation fee for change in water use.	19
7.4.6. Additional annexation fee for Mitigation Plan water supply allocation.	20
7.4.7. Non-duplication of additional annexation fees.	20
8. TERMS AND CONDITIONS--GENERAL.	20
8.1. Equal treatment by MCWRA and MCWD.	20
8.2. Water Conservation Measures.	21
8.3. Defense of Rights.	21
8.4. Use of Annexation Fees.	21
8.5. Assessments.	21
8.6. Recordation.	21
9. DISPUTE RESOLUTION PROCEDURE.	21
10. CHALLENGE OF LAWS.	22
11. WAIVER OF RIGHTS.	22
12. NOTICES.	22
13. SEVERABILITY.	23
14. PARAGRAPH HEADINGS.	23
15. SUCCESSORS AND ASSIGNS.	23
16. ADMINISTRATORS.	23

TABLE OF CONTENTS
(Continued)

	<u>Page</u>
17. NEGOTIATED AGREEMENT AND FRAMEWORK.	24
18. AMENDMENT.	24
19. COUNTERPARTS.	24
20. ADDENDUM.	24

EXHIBITS

- "A" Marina Area
- "B" MCWD service area to be annexed
- "C" Armstrong Ranch land to be annexed
- "D" Lonestar property to be annexed
- "E" Calculation of Incremental Cost for
Tertiary Treated Water
- "F" Armstrong Areas Reserved For Transfer to MCWD
- "G" MRWPCA Addendum

ANNEXATION AGREEMENT AND GROUNDWATER MITIGATION FRAMEWORK
FOR
MARINA AREA LANDS

SUBJECT: Management and Protection of Salinas River Groundwater Basin; Annexation of Marina Area Lands To Zones 2 and 2A of the Monterey County Water Resources Agency

1. PURPOSE AND AUTHORITY.

1.1. Purpose. The purpose of this Agreement and Framework is to help reduce seawater intrusion and protect the groundwater resource and preserve the environment of the Salinas River Groundwater Basin through voluntary commitments by the Parties to limit, conserve and manage the use of groundwater from the Salinas River groundwater basin, and to provide the terms and conditions for the annexation of certain territory in the Marina area to the Monterey County Water Resources Agency's benefit assessment Zones 2 and 2A as a financing mechanism providing additional revenues to the Monterey County Water Resources Agency to manage and protect the groundwater resource in the Salinas River Groundwater Basin and to reduce seawater intrusion.

1.2. Authority. This Agreement and Framework is entered into under the authority of the Agency Act, the California Water Code, and the California Government Code.

2. DEFINITIONS AND DESIGNATIONS. The following definitions and designations apply to this Agreement and Framework:

2.1. Parties.

2.1.1. Marina Coast Water District ("MCWD"). A political subdivision of the State of California, located in Monterey County, governed by MCWD's Board of Directors.

2.1.2. Monterey County Water Resources Agency ("MCWRA"). A water and flood control agency created by the State of California, with jurisdiction coextensive with Monterey County, governed by the Monterey County Water Resources Agency Board of Supervisors.

2.1.3. J. G. Armstrong Family Members ("Armstrong"). The owners of the Armstrong Ranch in the Marina area of Monterey County.

2.1.4. RMC Lonestar ("Lonestar"). A California general partnership and owner of the Lonestar property in the Marina area of Monterey County.

2.1.5. City of Marina ("City"). An incorporated municipality within Monterey County, organized and operating under the laws of the State of California, governed by its City Council.

2.2. AFY. Acre-feet per year.

2.3. Agency Act. MCWRA's enabling legislation adopted by Chapter 1159 of the Statutes of 1990, and Chapter 1130 of the Statutes of 1991, set forth in full in West's California Water Code Appendix, Chapter 52.

2.4. Armstrong Ranch. About 1850 acres of land in the Marina area, as shown on Exhibit "C," about 322 acres of which is within the City of Marina, plus an additional 150 acres not shown on Exhibit "C" which is already in the Zones.

2.5. Basin. The Salinas River Groundwater Basin.

2.6. BMP. The MCWRA's Basin Management Plan for the Salinas River Groundwater Basin.

2.7. CEQA. The California Environmental Quality Act, Public Resources Code sections 21000 and following.

2.8. CSIP. The Castroville Seawater Intrusion Project, a distribution system project already approved and being implemented by MCWRA to provide reclaimed water for irrigation in the Castroville Area of Monterey County.

2.9. Effective Date. Subject to paragraph 4, this Agreement and Framework shall be fully effective when executed by all the Parties.

2.10. Exhibits.

"A" The general geographic relationship of MCWD, Armstrong and Lonestar to the Basin and to the Zones is shown on the diagram attached to this Agreement and Framework as Exhibit "A."

"B" MCWD service area to be annexed

"C" Armstrong Ranch land to be annexed

"D" Lonestar property to be annexed

"E" Calculation of Incremental Cost for Tertiary Treated Water

"F" Armstrong Areas Reserved For Transfer to MCWD

"G" MRWPCA Addendum

2.11. FEIR. The Final Environmental Impact Report for the Salinas Valley Seawater Intrusion Program (February 1992).

2.12. Fort Ord. The land within the boundaries of the former Fort Ord Military Reservation.

2.13. Lonestar Property. A parcel containing about 400 acres of land in the Marina area, as shown on Exhibit "D."

2.14. Marina Area. Lands served by, adjacent to, or within the sphere of influence of MCWD.

2.15. MCWD Water Plans. The Urban Water Master Plan and the Urban Water Shortage Contingency Plan adopted by MCWD.

2.16. MCWRA/MRWPCA Agreement. Monterey County Agreement No. A-6078, "Agreement Between The Monterey County Water Resources Agency And The Monterey Regional Water Pollution Control Agency For Construction And Operation Of A Tertiary Treatment System," dated for reference purposes June 16, 1992, as amended on or before December 1, 1995.

2.17. Mitigation Plan. A plan for a potable water supply capable of mitigating the effects of seawater intrusion and providing a long-term potable water supply to MCWD's distribution system.

2.18. Mitigation Plan Implementation. The Mitigation Plan shall be considered "implemented" upon the delivery of potable water to MCWD's distribution system from a completed, long-term, potable water supply system, after system testing has been successfully completed.

2.19. Agreement and Framework. This Annexation Agreement and Groundwater Framework for Marina Area Lands.

2.20. Monterey Regional Water Pollution Control Agency ("MRWPCA"). A joint powers authority providing sewage treatment service to its member entities in Northern Monterey County, governed by its Board of Directors.

2.21. MRWPCA Annexation Agreement. "Annexation Agreement Between The Marina County Water District And The Monterey Regional Water Pollution Control Agency," dated April 25, 1989, as amended on or before December 1, 1995.

2.22. 1990 Agreement. Monterey County Agreement No. A-5471, "Preliminary Agreement Between United States of America, Marina Coast Water District, and Monterey County Flood Control and Water Conservation District," dated July 12, 1990.

2.23. SVRP. The Salinas Valley Reclamation Project, a project already approved and being implemented by MCWRA, in

cooperation with MRWPCA, to reclaim water at the MRWPCA's regional treatment plant, for irrigation through the CSIP.

2.24. Zones. Zones 2 and 2A of the MCWRA, which are the zones of benefit and assessment for the MCWRA's Nacimiento and San Antonio reservoirs.

3. FACTS AND CIRCUMSTANCES. This Agreement and Framework is entered into with regard to the following facts and circumstances:

3.1. The MCWRA has approved fourteen other annexations to Zones 2 and 2A since 1991. Like other areas which have been annexed, the Marina area is within the Salinas River Groundwater Basin, has been using groundwater for many years, and has strong claims to groundwater rights. Since the Fort Ord annexation in 1993, the Marina area is surrounded on three sides by Zones 2 and 2A, and by Monterey Bay to the west.

3.2. MCWRA agreed in the 1990 Agreement to "encourage and support" annexing MCWD to Zones 2 and 2A. MCWD has worked for about thirteen years with the MCWRA on plans for a reliable, long-term water supply for the northern Basin area, including the Marina area and Fort Ord. MCWD's participation has included payment of money to assist the planning effort. As part of the 1990 Agreement, MCWD paid for survey and planning work for the long-term water supply effort. Sums paid by MCWD to MCWRA total over \$400,000. The work for which MCWD paid will be useful for the Mitigation Plan.

3.3. MCWD, City, Armstrong and Lonestar claim the right to use groundwater from the Basin, to the full extent provided by law. MCWD takes water from wells owned and operated by MCWD and drilled into the "180-foot", "400-foot" and "900-foot" aquifers in the Basin. About ninety-eight percent of potable water used currently by MCWD comes from the 900-foot aquifer. MCWD's current maximum pumping capacity is 5,800 gpm (9,350 afy) of potable water and 1,100 gpm (1,770 afy) of other usable water. Allowing for routine maintenance and providing a contingency factor for emergency shutdown, MCWD's current estimated operational pumping capacity for potable water is 3900 gpm (6,000 afy).

3.4. MCWD agreed in writing in 1988 to cooperate with the City in providing water service to the Lonestar property and the Armstrong Ranch. A coordinated and centralized water supply for the Marina Area in furtherance of that 1988 agreement will facilitate management and protection of the groundwater resource in the Marina Area. Armstrong claims the right and ability to use not less than 920 afy of potable water from the Basin to provide potable water service to the Armstrong Ranch, and the right to use water for agricultural purposes. MCWD currently supplies some water to the Armstrong Ranch. The Armstrong Ranch will need reclaimed water for golf course purposes, park purposes and such other general uses as may be required by any agency having

jurisdiction as a condition of development. The Lonestar property currently uses about 500 afy of groundwater from the Basin.

3.5. The MCWD Water Plans are based on a total need within MCWD's current boundaries of 3,020 afy of water for potable uses and about 280 afy additional water suitable for irrigation, and on additional projected need by the rest of the Marina area as specified in the MCWD Water Plans.

3.6. MCWRA has previously annexed Fort Ord into Zones 2 and 2A. The September 1993 Agreement for that annexation provides that until implementation of a project to provide a substitute supply, a maximum of 6,600 afy may be withdrawn from the Basin for use on Fort Ord lands, provided no more than 5,200 afy are withdrawn from the 180-foot aquifer and 400-foot aquifer. The USA received a credit against annexation fees for about \$400,000 paid under the 1990 Agreement.

3.7. Pursuant to paragraph 12 of the MRWPCA Annexation Agreement, MCWD has the right to obtain from the MRWPCA, at the regional treatment plant, treated wastewater for reuse by the MCWD in quantities equal to the volume of MCWD wastewater treated by MRWPCA and such additional quantities as from time to time are not committed to any other users for beneficial use. MCWD's cost for such treated wastewater will be the MRWPCA's incremental cost over secondary treatment, to meet applicable local, state and federal requirements for water reuse.

3.8. The MCWRA/MRWPCA Agreement provides that the SVRP shall be designed and built for tertiary treatment of wastewater to be used for irrigation through the CSIP. That Agreement also mentions possible future interties with other agencies. The MCWRA/MRWPCA Agreement commits flows of wastewater to the CSIP as provided in Article IV and Exhibit C of that Agreement, excepting flows taken by MCWD pursuant to the MRWPCA Annexation Agreement.

4. REQUEST FOR ANNEXATION.

4.1. Request by MCWD, Armstrong, and Lonestar. Execution of this Agreement and Framework shall be deemed to be a formal and joint request by the signatories that the MCWRA's Board of Supervisors exercise their authority under section 7 of the Agency Act (West's California Water Code App. § 52-7) to annex to the Zones the lands described in Exhibits "B", "C" and "D" to this Agreement and Framework, on the terms and conditions of this Agreement and Framework as executed by the requesting signatories. No other terms or conditions shall apply to any annexation under this Agreement and Framework without the written agreement of all the Parties affected by the change.

4.2. Request by MCWD. MCWD is requesting immediate annexation of all the lands described in Exhibit "B." The lands to be annexed include the land which contains Olson School and the Methodist Church.

4.3. Request by Armstrong. Armstrong is requesting annexation of its land described in Exhibit "C", which annexation would take effect as provided in paragraph 6.2 of this Agreement and Framework.

4.4. Request by Lonestar. Lonestar is requesting immediate annexation of its land described in Exhibit "D", which annexation would take effect as provided in paragraph 7.3. of this Agreement and Framework.

4.5. Effect of Request. Other than to serve as a formal annexation request pursuant to section 7 of the Agency Act, this Agreement and Framework shall have no effect until its execution by the MCWRA.

5. TERMS AND CONDITIONS--MCWD.

5.1. Quantity limitations on MCWD's groundwater pumping.

5.1.1. Commencing on the effective date of this Agreement and Framework and continuing until Mitigation Plan Implementation, MCWD will limit its withdrawal of potable groundwater from the Basin for land in the Marina area and outside the former Fort Ord Military Reservation to 3,020 afy of potable groundwater, and only such additional quantities as are permitted by this paragraph 5.1. MCWRA's groundwater resource planning for the existing MCWD service area will be based on the latest information and projections contained in the MCWD Water Plans, using 3,020 afy as a planning guideline for potable water use.

5.1.1.1. After compliance with all applicable requirements of law, including but not limited to CEQA, MCWD may improve the interconnection between the MCWD water system and the water system serving Fort Ord, to provide for joint, conjunctive and concurrent use of all system facilities to serve Fort Ord and other areas served by MCWD, and the other Parties will cooperate on MCWD's increased withdrawal of potable groundwater by up to 1,400 afy from the 900-foot aquifer to enable the increased withdrawals from 5200 afy to 6600 afy for use on Fort Ord, as provided in paragraph 4.c. of the September 1993 Agreement between The United States of America and the MCWRA.

5.1.1.2. If the Armstrong property has been annexed to the Zones, the other Parties will cooperate on MCWD's increased withdrawal of up to 920 afy from the Basin, on the condition that such withdrawals shall be used only to provide water to the Armstrong Ranch and, to the extent that such water is requested and accepted by Armstrong, such use shall in its entirety be applied to the satisfaction of Armstrong's entitlement under paragraph 6.9. of this Agreement and Framework.

5.1.1.3. If the Lonestar property has been annexed to the Zones, the other Parties will cooperate on MCWD's

increased withdrawal of up to 500 afy from the Basin, on the condition that such withdrawals shall be used only to provide water to the Lonestar property, and, to the extent that such water is requested and accepted by Lonestar, such use shall in its entirety be applied to the satisfaction of Lonestar's entitlement under paragraph 7.2. of this Agreement and Framework.

5.1.2. Conditioned upon MCWRA's compliance with paragraphs 5.1, 5.2, 5.3., 5.5, 5.7, 8.1, 8.2 and 8.3, after Mitigation Plan Implementation, MCWD will be governed by such limitations on the withdrawal of water from the Basin as shall be included in the terms of the Mitigation Plan.

5.2. No objection by MCWRA to MCWD withdrawals except pursuant to section 22 of Agency Act. The MCWRA shall not object to any withdrawal by MCWD which is mentioned in section 5.1 above, except in compliance with section 22 of the Agency Act. All groundwater withdrawn from the Basin by MCWD may be used only within the Basin.

5.3. Management of 900-foot aquifer. The Parties agree that the "900-foot" aquifer should be managed to provide safe, sustained use of the water resource, and to preserve to MCWD the continued availability of water from the "900-foot" aquifer. The Parties will work to include in a Mitigation Plan the concept that water from the Mitigation Plan which costs less than the cost of desalinated water should be the primary source of potable water for the lands described in Exhibits "B", "C", and "D", and wells in the "900-foot" aquifer should be a secondary source, if seawater intrusion is shown to be affecting the "900-foot" aquifer by credible scientific evidence. The Parties will also work together on measures to protect the "900-foot" aquifer.

5.4. Compliance with CEQA and other applicable laws. MCWD's participation in the Mitigation Plan or any other alternative water supply plan is subject to compliance with all applicable laws, including but not limited to CEQA, and to review and approval by the MCWD.

5.5. MCWD development of alternative water supplies. MCWRA agrees that it is appropriate for MCWD to plan for and develop any new water supplies, including but not limited to wastewater reclamation and desalination, that help to meet MCWD's needs, except that the MCWRA believes that the unilateral development of water by MCWD would not be appropriate from any of the following sources: the 180-foot and 400-foot confined aquifers in the Pressure Area of the Salinas Valley Groundwater Basin, the unconfined aquifer in the three other areas in the Salinas Valley Groundwater Basin (East side, Forebay, and Upper Valley), and the Salinas River and its tributaries.

5.6. MCWD payment to MCWRA for tertiary treated water. In satisfaction of paragraph 12 of the MRWPCA Annexation Agreement, MCWD will pay to MCWRA the incremental cost over secondary

treatment to receive tertiary treated water from MRWPCA's planned tertiary treatment facilities at its regional treatment plant. The Parties agree that this cost shall be calculated as set forth on Exhibit "E" to this Agreement and Framework.

5.7. MCWD right to receive tertiary treated water from MRWPCA plant.

5.7.1. Pursuant to the MRWPCA Annexation Agreement, on or after the date of first delivery of water from the CSIP and upon compliance with all then-applicable requirements of law, including but not limited to CEQA, MCWD shall have the right to receive tertiary treated water from the tertiary treatment plant constructed and maintained pursuant to the SVRP, as provided herein.

5.7.2. The CSIP requires maximum available reclaimed water flows from the SVRP during the months of April through September to replace historically high uses of groundwater during those months, and to thereby maximize environmental benefits. Accordingly, during the months of April through September, MCWD agrees to defer taking any water over 300 afy it is entitled to take from the tertiary treatment plant under the MRWPCA Annexation Agreement. MCWD will also defer taking the first 300 afy of such flows to which it is entitled, if and after MCWD constructs a reservoir to store replacement winter flows.

5.7.3. During the months of October through March, MCWD may take the full amount of the reclaimed water to which it would, under the MRWPCA Annexation Agreement, have first priority during those months, together with an amount of water equal to the amount deferred during the immediately preceding months of April through September under paragraph 5.7.2. above. MCWD will take the deferred amount in equal or approximately equal monthly portions spread throughout the October-March period, or as otherwise agreed in writing by the MCWD and the MCWRA.

5.7.4. If MCWD's ability to supply reclaimed water is interrupted for any reason, MCWD and MCWRA will act jointly and diligently, together and with MRWPCA, to mitigate possible damage to users of such flows, including possible interim use of MCWD's wells to provide a substitute source of water.

5.8. Effective date of annexation. The annexation to Zones 2 and 2A of the MCWD lands described in Exhibit "B" shall take effect immediately upon approval of the annexation by the MCWRA Board of Supervisors on the terms of this Agreement and Framework, or, if the annexation is approved by ordinance, then thirty (30) days after adoption of an ordinance approving the terms of this Agreement and Framework.

5.9. Annexation fee.

5.9.1. Amount of MCWD annexation fee. To annex all the land described in Exhibit "B" to the Zones, MCWD shall pay to MCWRA an annexation fee in the amount of Two Million Eight Hundred Forty-Nine Thousand Four Hundred and Ten Dollars (\$2,849,410.00) (based on 1750 acres in the MCWD service area and water extraction use of 3020 afy). MCWD shall pay this amount, subject to any adjustments hereinafter described, in semi-annual installments as provided in paragraph 5.9.3. below. By giving written notice to MCWRA on or before May 1, 1997, MCWD may elect to pay the annexation fee in full, without interest, in one lump sum on or before July 1, 1997.

5.9.2. Credit. MCWD shall have a credit of \$400,000 against the annexation fee, based on the 1990 Agreement and the similar credit previously given to the U.S.A. on the annexation of Fort Ord to the Zones.

5.9.3. Payment of annexation fee. MCWD shall pay its annexation fee as follows:

5.9.3.1. From the total amount of the annexation fee, subtract the credit of \$400,000, to determine the "net annexation fee." MCWD may elect to pay the net annexation fee in one lump sum, as provided in paragraph 5.9.1, or may pay in installments as provided below. If MCWD elects to pay in one lump sum, any late payment shall bear interest at the annual rate of 6% from the due date and shall be subject to the same penalties and collections procedures as are set forth in paragraph 6.7. of this Agreement and Framework.

5.9.3.2. MCWD may pay in twenty semi-annual installments, beginning in the fiscal year commencing on July 1, 1997, with interest at the annual rate of six percent (6%) on the unpaid principal balance accruing from July 1, 1997, and with semi-annual payments due on November 1 and February 1 and delinquent on December 10 and April 10 each fiscal year. The interest included in payments consisting of both principal and interest shall be calculated as though the installment were paid on the last day before delinquency, even if the installment is paid in advance of that date. The total amount of each installment paid on the net annexation fee shall be sufficient to amortize the full amount of principal and interest in twenty (20) equal semi-annual installments. There shall be no pre-payment penalty.

5.10. MCWD use of revenues prior to full payment of annexation fee. Until MCWD pays or receives credit for the entire annexation fee and all accrued interest on the fee, all revenue received by MCWD from the lands annexed to the Zones pursuant to this Agreement and Framework for or in connection with providing water and sewer service to the lands shall be used only for activities and functions duly performed by MCWD in connection with

providing water and sewer service, including, but not limited to, the payments required under this Agreement and Framework.

6. TERMS AND CONDITIONS--ARMSTRONG.

6.1. Ranch Areas. Annexation of the Armstrong Ranch to the Zones contemplates two general areas of the Ranch, which are designated for convenience "Area A" and "Area B." Area A consists of about 900 acres which is expected to be developed for urban uses. Area B consists of about 950 acres, a portion of which is expected to be used for irrigated agriculture, and about 220 acres of which is expected to be given to MCWD to store treated water. For purposes of determining assessments, standby charges and the like, the initial classification of the land within Area B will be determined at the time of annexation.

6.2. Effective Date of Annexation. Approval of this Agreement and Framework by the MCWRA Board of Supervisors shall constitute approval for annexation of the Armstrong Ranch to the Zones at the time and on conditions approved by LAFCO and satisfactory to Armstrong for concurrent annexation of the Armstrong Ranch to MCWD and the City of Marina, including recordation of a final subdivision map upon conditions satisfactory to Armstrong.

6.3. Participation by Armstrong in MCWD water sources. Subject to compliance with all then-applicable requirements of law, including but not limited to CEQA, Armstrong Ranch shall be entitled at all times to participate on an equitable basis with MCWD in potable water sources developed by MCWD pursuant to paragraph 5.5. of this Agreement and Framework, in which event the limitations concerning the use of water on the Armstrong Ranch, as set forth in paragraph 6.9. shall not be applicable to using potable water developed pursuant to paragraph 5.5.

6.4. Prerequisites to annexation to MCWD and the City of Marina. Any application to LAFCO for annexation of any Armstrong Ranch property to either MCWD or the City of Marina shall be concurrently submitted by the City and MCWD, and shall provide that such property to be annexed shall be within the boundaries of both MCWD and the City of Marina.

6.5. Annexation fee.

6.5.1. When the Armstrong Ranch has been annexed to the Zones, Armstrong will pay to MCWRA an annexation fee computed as the sum of

6.5.1.1. the product of multiplying the number of acres annexed by \$277/acre for land intended for urban or irrigated use and \$27.70/acre for land intended for grazing, dry land farming or other unirrigated use, and

6.5.1.2. the product of multiplying the number of afy of water from the Basin or the Mitigation Plan allocated to the annexed land by \$783/af for potable water intended for urban use and \$261/af for water intended for agricultural use. Such charge shall not be applicable to any water from a source other than the Salinas Valley Groundwater Basin or the Salinas River and its tributaries.

6.5.2. Fees for Armstrong are estimated to be about \$969,660 for Area A, based on 900 acres @ \$277/ac. and 920 afy @ \$783/af, and an amount subject to final determination upon actual annexation for Area B. For example, based on 250 irrigated acres @ \$277/ac., 700 unirrigated acres @ \$27.70/ac., and 650 afy of water @ \$261/af, the annexation fees for Area B would be about \$258,000.

6.5.3. If annexation of the Armstrong Ranch occurs more than seven years after MCWRA approves this Agreement and Framework, Armstrong shall pay the then-current annexation fees, instead of the fees set forth in paragraph 6.5.1 above.

6.5.4. Armstrong may elect to pay the annexation fee in a lump sum as provided in paragraph 6.6 below, or may pay the annexation fee in installments as provided in paragraph 6.7 below. There shall be no prepayment penalty.

6.5.5. If the agricultural water use on Area B is changed to a potable or industrial use, then Armstrong shall pay to the MCWRA as an additional annexation fee, an additional water charge computed as two-thirds ($\frac{2}{3}$ rds) of the product of the number of afy changed multiplied by the then-current annexation water charge. If Armstrong uses water on any part of the Armstrong Ranch which is initially annexed as land for unirrigated use, Armstrong shall pay an additional land fee of nine times the land fee specified for such land in 6.5.1.1 above. The additional water charge or land fee will be paid either in one lump sum, due and payable on the July 1 immediately following the change in water use, or in twenty (20) equal semi-annual installments over ten (10) years, with the payment period and interest accrual beginning on that July 1, in the same manner as prescribed for Armstrong's original annexation fee and subject to the same rules.

6.6. Payment of annexation fee in lump sum. If paid in a lump sum, the annexation fee shall be due and payable in full on July 1, next succeeding the first March 1 after the effective date of the annexation. Armstrong may elect to pay the annexation fee in full in one lump sum by giving written notice of such election to MCWRA not later than the May 1 immediately preceding the date payment is due. Any late payment shall bear interest at the annual rate of 6% from the due date, and shall be subject to the same penalties and collection procedures as are set forth in paragraph 6.7.

6.7. Payment of annexation fee in installments.

6.7.1. If paid in installments, the installments shall include interest on the unpaid principal balance at the annual rate determined in the manner hereinafter set forth, which interest shall begin to accrue on July 1, next succeeding the first March 1 after the effective date of the annexation. The interest rate on installments shall be six percent per annum. The interest included in each installment shall be calculated as though the installment were paid on the last day before delinquency, even if the installment is paid in advance of that date.

6.7.2. The amount of each semi-annual installment shall be sufficient to amortize the full amount of principal and interest in twenty (20) equal semi-annual installments.

6.7.3. The semi-annual installments shall be paid and collected at the same time and in the same manner and by the same persons as, and together with and not separately from, general agency and zone taxes and shall be delinquent at the same time and thereafter subject to the same delinquency penalties. The first installment shall be due on November 1 following July 1, next succeeding the first March 1 after the effective date of the annexation and shall be delinquent if not paid on or before the following December 10. The second installment shall be due on the following February 1 and shall be delinquent if not paid on or before the following April 10. Thereafter, installments shall fall due and become delinquent on the same dates each year.

6.7.4. The full amount of principal and interest shall be paid not later than April 10, in the tenth year following July 1, next succeeding the first March 1 after the effective date of the annexation.

6.7.5. The amount of each installment shall constitute a lien on each annexed parcel as of noon on the March 1 immediately preceding the fiscal year (July 1-June 30) in which payment of the installment will be due. If the property is subdivided, then a prorata share of the annexation fee shall become a lien on each individual parcel, based upon the ratio that the land area of the individual parcel bears to the total land area of all parcels against which the annexation fee is a lien. All laws applicable to the levy, collection and enforcement of general agency and zone taxes, including, but not limited to, those pertaining to delinquency, correction, cancellation, refund and redemption, shall be applicable to such installments.

6.7.6. MCWD shall pay to MCWRA any fees to annex the lands within the MCWD Reserved Area described in paragraph 6.10 and shown on Exhibit "F" to this Agreement and Framework.

6.8. Costs, assessments, fees and charges. Costs, assessments, fees and charges imposed by MCWD in connection with providing water and wastewater treatment capacity and service to

the Armstrong Ranch must be equitable and reasonable and must be reasonably related to services and benefits received, consistent with the County Water District Law (Water Code sections 30,000 and following), with Government Code sections 50076 and 66013, and with applicable case law.

6.9. Quantity limitations on Armstrong water use.

6.9.1. Armstrong shall have the right to utilize on the Armstrong Ranch groundwater for irrigation, and 920 afy of additional water for potable uses withdrawn from the Basin, subject to the limitations set forth herein. Armstrong shall limit potable water withdrawn from the Basin and used for potable purposes on the Armstrong Ranch to no more than 20 afy when this Agreement and Framework becomes effective, 150 afy upon annexation to the Zones, and an additional 150 afy every two years thereafter, up to the total of 920 afy for potable purposes from the Basin.

6.9.2. MCWD shall provide Armstrong with water service for all residential, municipal and industrial uses on the Armstrong Ranch. In providing such service, the water allocation for Armstrong, set forth above in paragraph 6.9.1., shall be added to the MCWD water allocation, as provided in paragraph 5.1.

6.9.3. Groundwater underlying Area B shall be used solely for agricultural activities conducted on Area B, except that not more than 20 afy of such groundwater may be used for potable uses on the Armstrong Ranch, and additional groundwater underlying Area B also may be used by the MCWD on the part of Area B conveyed to MCWD and may also be used on the adjacent lands of the MRWPCA.

6.9.4. The limits on water use provided by this paragraph 6.9. shall not apply to use of reclaimed water or of potable water developed from a source other than the Salinas Valley Groundwater Basin or the Salinas River and its tributaries.

6.10. Reservation of lands for MCWD.

6.10.1. MCWD Reserved Area . Armstrong shall reserve, for use by MCWD, the area shown diagrammatically on Exhibit "F" to this Agreement and Framework as "MCWD Reserved Area", and the non-exclusive easements shown on Exhibits "C" and "F" in favor of MCWD, appurtenant to said MCWD Reserved Area and to MCWD's reclaimed water system and transferrable with either, for construction, roads, utilities (including communications), pipelines, and any other purpose for which a road may be used, subject to the non-exclusive easements shown on Exhibits "C" and "F" to be reserved in favor of Armstrong, which said reserved easements in favor of Armstrong shall be for wells (located within the southerly 60' of the 160' x 1000' strip as shown on Exhibit "F", which wells may be relocated within said strip from time to time, on well sites which may extend north of the southerly 60' of the strip) for agricultural irrigation, roads, utilities (including

communications), pipelines, and any other purpose for which a road may be used, shall be freely assignable and usable by others, and not subject to being extinguished or limited because of overburden or surcharge, and which said reserved easements shall not interfere or be used so as to interfere with the use of the balance of said MCWD Reserved Area for the production, storage, or distribution of treated water (tertiary treatment or its equivalent), or potable water. Before either MCWD or Armstrong installs any facilities in the reserved easements, MCWD and Armstrong will meet and confer to assure that their respective uses of and facilities in the said reserved easements will not conflict. Both parties shall act reasonably in considering the needs of the other. MCWD shall not place any non-potable water impoundment within the 160' x 1000' strip, nor any non-potable water pipeline closer than 110' north of the southerly boundary. MCWD shall not be required to move any facilities the installation of which has been approved by Armstrong. Water from wells located in said reserved strip shall be used only on lands of Armstrong and also may be used by the MCWD on the part of Area B conveyed to MCWD and may also be used on the adjacent lands of the MRWPCA.

6.10.1.1. The MCWD Reserved Area, which shall not exceed 250 acres within the boundaries shown on Exhibit "F", will be "office" surveyed at the expense of MCWD within sixty days, and "field" surveyed at the expense of MCWD within one year, following approval by the MCWRA Board of Supervisors of this Agreement and Framework.

6.10.1.2. MCWD will diligently undertake, and MCWRA, City and Armstrong will cooperate in the planning and conduct of, the appropriate environmental review and application for appropriate permits to use MCWD Reserved Area for facilities for the production, storage, or distribution of treated water (tertiary treatment or its equivalent), or potable water. Any use other than for the production, storage, or distribution of treated water (tertiary treatment or its equivalent), or potable water, shall require the prior written approval of Armstrong, and any conveyances from Armstrong to MCWD shall contain appropriate restrictions on such additional use in the form of a condition subsequent to the conveyances and a power of termination in favor of Armstrong. Any attempt to condemn the power of termination shall be subject to the provisions of paragraph 6.10.3. as if it were a condemnation of fee title.

6.10.1.3. MCWD may use and take conveyance of the MCWD Reserved Area in phases of not less than 40 acres. Armstrong's obligation to reserve the MCWD Reserved Area shall expire at midnight on June 30, 2003, or upon delivery to Armstrong of written notice from MCWD cancelling MCWD's right to receive conveyance of the MCWD Reserved Area. Armstrong's obligation to reserve the MCWD Reserved Area shall be extended to July 1, 2010, if MCWD has begun to use at least 40 acres of the MCWD Reserved Area by June 30, 2003.

6.10.2. Gift by Armstrong or payment by MCWD.

Armstrong has offered to make a gift to MCWD, at the agreed value of \$25,000 per acre, of 50 acres of the MCWD Reserved Area for the first 150 afy of water which Armstrong is entitled to withdraw from the Basin as provided in paragraph 6.9. of this Agreement and Framework, and 40 acres for each additional 150 afy which Armstrong may withdraw pursuant to paragraph 6.9, or less than 40 acres for the last 150 afy, if the last remaining portion of the MCWD Reserved Area is less than 40 acres, but in no event to exceed the total acreage of the area shown as the MCWD Reserved Area on Exhibit "F" to this Agreement and Framework. This offer may be accepted by MCWD following such final annexation at any time during the time Armstrong is reserving the MCWD Reserved Area. In any event, however, and notwithstanding the foregoing, upon receipt by Armstrong of written request from MCWD, Armstrong will forthwith convey all or part of the MCWD Reserved Area to MCWD by grant deed. Any such part must begin in the southwest corner of MCWD Reserved Area, must be parallel to the southerly and westerly boundaries of the MCWD Reserved Area, must be rectangular or trapezoidal in shape, must be at least 40 acres in size, and must be free of any financial encumbrances except taxes and assessments not delinquent, but subject to all other encumbrances, and further subject to all laws, ordinances, regulations and rights of all governmental bodies having jurisdiction in, on or over the subject real property as they may from time to time exist. Title shall also be subject to the lien of a first deed of trust for each conveyance, executed by MCWD in favor of Armstrong securing the obligation of MCWD in favor of Armstrong next hereinafter referred to. Beginning six months after conveyance of any part of the MCWD Reserved Area which is not conveyed as a gift to MCWD, MCWD shall commence paying to Armstrong a sum calculated by multiplying the number of acres in such conveyance by Twenty-Five Thousand Dollars (\$25,000.00). The price of \$25,000 per acre shall be adjusted as of July 1, 2003, if Armstrong's obligation to reserve the property is extended to 2010 pursuant to paragraph 6.10.1.3. of this Agreement and Framework. In such event, the price per acre shall be computed by multiplying \$25,000 by the percentage increase or decrease in the Cost of Living Index for all urban consumers in the San Francisco-Oakland-San Jose Area (1982-1984=100), occurring between July 1, 1997 and July 1, 2003, or the closest dates to such dates for which figures are available. Payment shall be made in 20 equal semi-annual payments, commencing six months after such conveyance, sufficient to amortize the obligation fully, with the unpaid principal balance bearing interest from the date of conveyance to MCWD, at the prime rate of the Bank of America in San Francisco, California, as of July 1 each year during the term of this obligation, but not to exceed the maximum rate permitted by law to be charged by Armstrong in such transaction. Any such payments made or to be made by MCWD, together with interest from the date of MCWD's payment, through December 31, 2010, at the prime rate of interest of the Bank of America in San Francisco, California, shall be included in computing annexation fees, capacity charges and service charges charged by MCWD for the part of the Armstrong Ranch to which the payments made by MCWD to Armstrong relate.

6.10.3. Waiver of further acquisitions by MCWD, MCWRA, and City of Marina; liquidated damages. Except for incidental water system and wastewater system and storm water system easements, incidental access easements, incidental road easements, and incidental utility easements, as may be necessary from time to time, and further excepting land dedicated to public uses through the development process as a condition of development, MCWD, City, and MCWRA shall not seek to acquire fee title to land or easements thereon on any part of the Armstrong Ranch by eminent domain for use in providing water or wastewater service, or for any other public purpose whatsoever, except that, as to City only, said prohibition shall apply only with respect to eminent domain for water or sanitary sewer facilities and shall not be applicable to eminent domain for other public purposes; provided, however, that in the event that any of said agencies shall, notwithstanding the foregoing covenant, warranty and representation, seek to exercise the power of eminent domain for any other purpose except as excepted above, then, and in that event, all Parties hereto hereby agree that the fair market value of and the price to be paid for all such land lying within MCWD Reserved Area as shown on Exhibit "F" hereto (and any additional area shown on an exhibit to a fully executed addendum to this Agreement and Framework) shall be the sum of Twenty-Five Thousand Dollars (\$25,000.00) cash per acre and the fair market value and purchase price for all land lying outside of said MCWD Reserved Area as shown on Exhibit "F" hereto (and any additional area shown on an exhibit to a fully executed addendum to this Agreement and Framework) shall be the sum of ONE HUNDRED THOUSAND Dollars (\$100,000.00) cash per acre. FURTHERMORE, IN THE EVENT THAT MCWD, CITY, AND MCWRA, OR ANY OF THEM, SHOULD BREACH THIS COVENANT, WARRANTY AND REPRESENTATION, THEN, AND IN THAT EVENT, THE PARTIES AGREE THAT ARMSTRONG SHALL BE ENTITLED TO RECOVER FROM SUCH BREACHING PARTY, AS LIQUIDATED DAMAGES, AN AMOUNT EQUAL TO THE DIFFERENCE BETWEEN THE PRICE PER ACRE ACTUALLY PAID AND TWENTY-FIVE THOUSAND DOLLARS (\$25,000.00) PER ACRE MULTIPLIED BY THE NUMBER OF ACRES SO TAKEN IN THE CASE OF LAND WITHIN SAID MCWD RESERVED AREA (AND ANY ADDITIONAL AREA SHOWN ON AN EXHIBIT TO A FULLY EXECUTED ADDENDUM TO THIS AGREEMENT AND FRAMEWORK), AND THE DIFFERENCE BETWEEN THE PRICE PER ACRE ACTUALLY PAID AND ONE HUNDRED THOUSAND DOLLARS (\$100,000.00) PER ACRE MULTIPLIED BY THE NUMBER OF ACRES TAKEN IN THE CASE OF LAND LYING OUTSIDE OF MCWD RESERVED AREA (AND ANY ADDITIONAL AREA SHOWN ON AN EXHIBIT TO A FULLY EXECUTED ADDENDUM TO THIS AGREEMENT AND FRAMEWORK), AS LIQUIDATED DAMAGES, WHICH THE PARTIES AGREE IS A REASONABLE SUM CONSIDERING ALL THE CIRCUMSTANCES EXISTING ON THE DATE OF THIS AGREEMENT AND FRAMEWORK, INCLUDING THE RELATIONSHIP OF THE SUM TO THE RANGE OF HARM TO ARMSTRONG THAT REASONABLY COULD BE ANTICIPATED AND THE ANTICIPATION THAT PROOF OF ACTUAL DAMAGES WOULD BE COSTLY OR INCONVENIENT. IN PLACING THEIR SIGNATURES BELOW, EACH PARTY SPECIFICALLY CONFIRMS THE ACCURACY OF THE STATEMENTS MADE ABOVE AND THE FACT THAT EACH PARTY WAS REPRESENTED BY COUNSEL WHO EXPLAINED THE CONSEQUENCES OF THIS LIQUIDATED DAMAGES PROVISION AT THE TIME THIS AGREEMENT AND FRAMEWORK WAS MADE.

ARMSTRONG

James L. Lonestar
John L. Lonestar
John L. Lonestar
Charles W. Johnson III

MCWD

CITY

MCWRA

6.11. Annexation of portions of Armstrong Ranch used by MCWD. Notwithstanding any other provision of this section 6, portions of the Armstrong Ranch owned and/or used by MCWD may be annexed to the Zones at any time, upon MCWD's written request for such annexation, and after compliance with all then-applicable laws. Any annexation fees or charges by MCWRA for such annexed lands shall be paid by MCWD.

7. TERMS AND CONDITIONS--LONESTAR.

7.1. Compliance with Agency Act Section 22. The MCWRA acknowledges that it may not object to any withdrawal by Lonestar permitted by this section 7, except in compliance with section 22 of the Agency Act. All groundwater withdrawn from the Basin by Lonestar may be used only within the Basin.

7.2. Quantity Limitations. Commencing on the effective date of this Agreement and Framework, Lonestar shall limit withdrawal and use of groundwater from the Basin to Lonestar's historical use of 500 afy of groundwater.

7.3. Annexation of Lonestar Property to the Zones. Approval of this Agreement and Framework by the MCWRA Board of Supervisors shall constitute approval for annexation of the Lonestar Property in accordance with the terms of this Agreement and Framework. The actual annexation will occur as follows: The Lonestar Property annexation to the Zones will not take effect until the Lonestar Property has been approved for prior or concurrent annexation into MCWD. When such approval has been

ARMSTRONG

James Louis Lindsey J.
Phillip Lindsey
Gay M. Armstrong

MCWD

CITY

MCWRA

6.11. Annexation of portions of Armstrong Ranch used by MCWD. Notwithstanding any other provision of this section 6, portions of the Armstrong Ranch owned and/or used by MCWD may be annexed to the Zones at any time, upon MCWD's written request for such annexation, and after compliance with all then-applicable laws. Any annexation fees or charges by MCWRA for such annexed lands shall be paid by MCWD.

7. TERMS AND CONDITIONS--LONESTAR.

7.1. Compliance with Agency Act Section 22. The MCWRA acknowledges that it may not object to any withdrawal by Lonestar permitted by this section 7, except in compliance with section 22 of the Agency Act. All groundwater withdrawn from the Basin by Lonestar may be used only within the Basin.

7.2. Quantity Limitations. Commencing on the effective date of this Agreement and Framework, Lonestar shall limit withdrawal and use of groundwater from the Basin to Lonestar's historical use of 500 afy of groundwater.

7.3. Annexation of Lonestar Property to the Zones. Approval of this Agreement and Framework by the MCWRA Board of Supervisors shall constitute approval for annexation of the Lonestar Property in accordance with the terms of this Agreement and Framework. The actual annexation will occur as follows: The Lonestar Property annexation to the Zones will not take effect until the Lonestar Property has been approved for prior or concurrent annexation into MCWD. When such approval has been

ARMSTRONG

James Louis Armstrong Jr.
Phillip Armstrong
Susan David Armstrong

MCWD

CITY

MCWRA

6.11. Annexation of portions of Armstrong Ranch used by MCWD. Notwithstanding any other provision of this section 6, portions of the Armstrong Ranch owned and/or used by MCWD may be annexed to the Zones at any time, upon MCWD's written request for such annexation, and after compliance with all then-applicable laws. Any annexation fees or charges by MCWRA for such annexed lands shall be paid by MCWD.

7. TERMS AND CONDITIONS--LONESTAR.

7.1. Compliance with Agency Act Section 22. The MCWRA acknowledges that it may not object to any withdrawal by Lonestar permitted by this section 7, except in compliance with section 22 of the Agency Act. All groundwater withdrawn from the Basin by Lonestar may be used only within the Basin.

7.2. Quantity Limitations. Commencing on the effective date of this Agreement and Framework, Lonestar shall limit withdrawal and use of groundwater from the Basin to Lonestar's historical use of 500 afy of groundwater.

7.3. Annexation of Lonestar Property to the Zones. Approval of this Agreement and Framework by the MCWRA Board of Supervisors shall constitute approval for annexation of the Lonestar Property in accordance with the terms of this Agreement and Framework. The actual annexation will occur as follows: The Lonestar Property annexation to the Zones will not take effect until the Lonestar Property has been approved for prior or concurrent annexation into MCWD. When such approval has been

ARMSTRONG

James Louis Armstrong Jr.
Shelly Armstrong

Paul R. W. May 4/4/96

MCWD

CITY

MCWRA

6.11. Annexation of portions of Armstrong Ranch used by MCWD. Notwithstanding any other provision of this section 6, portions of the Armstrong Ranch owned and/or used by MCWD may be annexed to the Zones at any time, upon MCWD's written request for such annexation, and after compliance with all then-applicable laws. Any annexation fees or charges by MCWRA for such annexed lands shall be paid by MCWD.

7. TERMS AND CONDITIONS--LONESTAR.

7.1. Compliance with Agency Act Section 22. The MCWRA acknowledges that it may not object to any withdrawal by Lonestar permitted by this section 7, except in compliance with section 22 of the Agency Act. All groundwater withdrawn from the Basin by Lonestar may be used only within the Basin.

7.2. Quantity Limitations. Commencing on the effective date of this Agreement and Framework, Lonestar shall limit withdrawal and use of groundwater from the Basin to Lonestar's historical use of 500 afy of groundwater.

7.3. Annexation of Lonestar Property to the Zones. Approval of this Agreement and Framework by the MCWRA Board of Supervisors shall constitute approval for annexation of the Lonestar Property in accordance with the terms of this Agreement and Framework. The actual annexation will occur as follows: The Lonestar Property annexation to the Zones will not take effect until the Lonestar Property has been approved for prior or concurrent annexation into MCWD. When such approval has been

ARMSTRONG

James Louis Armstrong Jr.
Philip Armstrong

Elizabeth Armstrong

James Armstrong Jr.

MCWD

CITY

MCWRA

6.11. Annexation of portions of Armstrong Ranch used by MCWD. Notwithstanding any other provision of this section 6, portions of the Armstrong Ranch owned and/or used by MCWD may be annexed to the Zones at any time, upon MCWD's written request for such annexation, and after compliance with all then-applicable laws. Any annexation fees or charges by MCWRA for such annexed lands shall be paid by MCWD.

7. TERMS AND CONDITIONS--LONESTAR.

7.1. Compliance with Agency Act Section 22. The MCWRA acknowledges that it may not object to any withdrawal by Lonestar permitted by this section 7, except in compliance with section 22 of the Agency Act. All groundwater withdrawn from the Basin by Lonestar may be used only within the Basin.

7.2. Quantity Limitations. Commencing on the effective date of this Agreement and Framework, Lonestar shall limit withdrawal and use of groundwater from the Basin to Lonestar's historical use of 500 afy of groundwater.

7.3. Annexation of Lonestar Property to the Zones. Approval of this Agreement and Framework by the MCWRA Board of Supervisors shall constitute approval for annexation of the Lonestar Property in accordance with the terms of this Agreement and Framework. The actual annexation will occur as follows: The Lonestar Property annexation to the Zones will not take effect until the Lonestar Property has been approved for prior or concurrent annexation into MCWD. When such approval has been

ARMSTRONG

MCWD

Thomas P. Moore April 12, 1996

CITY

MCWRA

6.11. Annexation of portions of Armstrong Ranch used by MCWD. Notwithstanding any other provision of this section 6, portions of the Armstrong Ranch owned and/or used by MCWD may be annexed to the Zones at any time, upon MCWD's written request for such annexation, and after compliance with all then-applicable laws. Any annexation fees or charges by MCWRA for such annexed lands shall be paid by MCWD.

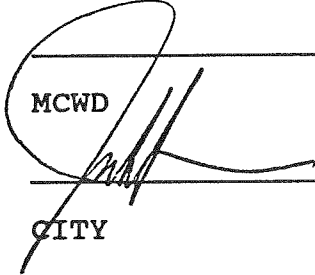
7. TERMS AND CONDITIONS--LONESTAR.

7.1. Compliance with Agency Act Section 22. The MCWRA acknowledges that it may not object to any withdrawal by Lonestar permitted by this section 7, except in compliance with section 22 of the Agency Act. All groundwater withdrawn from the Basin by Lonestar may be used only within the Basin.

7.2. Quantity Limitations. Commencing on the effective date of this Agreement and Framework, Lonestar shall limit withdrawal and use of groundwater from the Basin to Lonestar's historical use of 500 afy of groundwater.

7.3. Annexation of Lonestar Property to the Zones. Approval of this Agreement and Framework by the MCWRA Board of Supervisors shall constitute approval for annexation of the Lonestar Property in accordance with the terms of this Agreement and Framework. The actual annexation will occur as follows: The Lonestar Property annexation to the Zones will not take effect until the Lonestar Property has been approved for prior or concurrent annexation into MCWD. When such approval has been

ARMSTRONG

MCWD

CITY

MCWRA

6.11. Annexation of portions of Armstrong Ranch used by MCWD. Notwithstanding any other provision of this section 6, portions of the Armstrong Ranch owned and/or used by MCWD may be annexed to the Zones at any time, upon MCWD's written request for such annexation, and after compliance with all then-applicable laws. Any annexation fees or charges by MCWRA for such annexed lands shall be paid by MCWD.

7. TERMS AND CONDITIONS--LONESTAR.

7.1. Compliance with Agency Act Section 22. The MCWRA acknowledges that it may not object to any withdrawal by Lonestar permitted by this section 7, except in compliance with section 22 of the Agency Act. All groundwater withdrawn from the Basin by Lonestar may be used only within the Basin.

7.2. Quantity Limitations. Commencing on the effective date of this Agreement and Framework, Lonestar shall limit withdrawal and use of groundwater from the Basin to Lonestar's historical use of 500 afy of groundwater.

7.3. Annexation of Lonestar Property to the Zones. Approval of this Agreement and Framework by the MCWRA Board of Supervisors shall constitute approval for annexation of the Lonestar Property in accordance with the terms of this Agreement and Framework. The actual annexation will occur as follows: The Lonestar Property annexation to the Zones will not take effect until the Lonestar Property has been approved for prior or concurrent annexation into MCWD. When such approval has been

ARMSTRONG

MCWD

CITY

MCWRA

Edith Johnson

6.11. Annexation of portions of Armstrong Ranch used by MCWD. Notwithstanding any other provision of this section 6, portions of the Armstrong Ranch owned and/or used by MCWD may be annexed to the Zones at any time, upon MCWD's written request for such annexation, and after compliance with all then-applicable laws. Any annexation fees or charges by MCWRA for such annexed lands shall be paid by MCWD.

7. TERMS AND CONDITIONS--LONESTAR.

7.1. Compliance with Agency Act Section 22. The MCWRA acknowledges that it may not object to any withdrawal by Lonestar permitted by this section 7, except in compliance with section 22 of the Agency Act. All groundwater withdrawn from the Basin by Lonestar may be used only within the Basin.

7.2. Quantity Limitations. Commencing on the effective date of this Agreement and Framework, Lonestar shall limit withdrawal and use of groundwater from the Basin to Lonestar's historical use of 500 afy of groundwater.

7.3. Annexation of Lonestar Property to the Zones. Approval of this Agreement and Framework by the MCWRA Board of Supervisors shall constitute approval for annexation of the Lonestar Property in accordance with the terms of this Agreement and Framework. The actual annexation will occur as follows: The Lonestar Property annexation to the Zones will not take effect until the Lonestar Property has been approved for prior or concurrent annexation into MCWD. When such approval has been

obtained, Lonestar shall notify MCWRA, and the MCWRA Board of Supervisors shall declare by resolution the effective date of the annexation.

7.4. Annexation fee.

7.4.1. Amount of original annexation fee. When the Lonestar Property has been annexed to the Zones, Lonestar will pay to MCWRA an annexation fee computed as follows:

104 acres x \$277 (land fee)	=	\$ 28,808
264 acres x \$27.70 (open space)	=	7,313
500 afy x \$783/3 (water charge)	=	<u>130,500</u>
Total principal (original fee)	=	<u>166,621</u>
Total interest @ 6%	=	<u>57,370</u>
Total payment	=	<u>223,991</u>
Semi-annual payments	=	11,200

7.4.2. Choice of lump sum or installment. Lonestar may elect to pay the annexation fee in one lump sum or may pay in semi-annual installments.

7.4.3. Lump sum payment. If paid in a lump sum, the original annexation fee shall be due and payable in full on July 1, next succeeding the first March 1 after the effective date of the annexation. Lonestar may elect to pay the annexation fee in full in one lump sum by giving written notice of such election to MCWRA not later than the May 1 immediately preceding the date payment in a lump sum would be due. Any late payment shall bear interest at the annual rate of 6% from the due date, and shall be subject to the same penalties and collection procedures as are set forth in paragraph 7.4.4.

7.4.4. Installment payments.

7.4.4.1. If the original annexation fee or any addition thereto is paid in installments, the installments shall include interest on the unpaid principal balance at the annual rate determined pursuant to this Agreement and Framework. The interest rate on installments on the original annexation fee shall be six (6) percent per annum and shall begin to accrue on July 1, next succeeding the first March 1 after the effective date of the annexation. The interest rate for the additional water charge shall be equivalent to that which the County would pay for funds borrowed at the time the additional water charge is determined and shall begin to accrue at the beginning of the applicable payment period. The interest included in each installment shall be calculated as though the installment were paid on the last day

before delinquency, even if the installment is paid in advance of that date.

7.4.4.2. The amount of each semi-annual installment shall be sufficient to amortize the full amount of principal and interest in twenty (20) equal semi-annual installments.

7.4.4.3. The semi-annual installments shall be paid and collected at the same time and in the same manner and by the same persons as, and together with and not separately from, general agency and zone taxes and shall be delinquent at the same time and thereafter subject to the same delinquency penalties. The first installment shall be due on November 1 following July 1, next succeeding the first March 1 after the effective date of the annexation and shall be delinquent if not paid on or before the following December 10. The second installment shall be due on the following February 1 and shall be delinquent if not paid on or before the following April 10. Thereafter, installments shall fall due and become delinquent on the same dates each year.

7.4.4.4. The full amount of principal and interest shall be paid not later than April 10, in the tenth year following July 1, next succeeding the first March 1 after the effective date of the annexation.

7.4.4.5. The amount of each installment shall constitute a lien on the annexed property as of noon on the March 1 immediately preceding the fiscal year (July 1-June 30) in which payment of the installment will be due. If the property is subdivided, then a prorata share of the annexation fee shall become a lien on each individual parcel, based upon the ratio that the land area of the individual parcel bears to the total land area of all parcels against which the annexation fee is a lien. All laws applicable to the levy, collection and enforcement of general agency and zone taxes, including, but not limited to, those pertaining to delinquency, correction, cancellation, refund and redemption, shall be applicable to such installments.

7.4.5. Additional annexation fee for change in water use. If the water use on the Lonestar Property is changed from an industrial or agricultural use to a potable or other use, or if MCWD delivers potable water to the Lonestar Property pursuant to paragraph 5.1.1.3., then Lonestar shall pay to the MCWRA as an additional annexation fee, an additional water charge computed as two-thirds (2/3rds) of the product of 500 afy multiplied by the then-current annexation water charge. If Lonestar uses water on the 264-acre open-space area, Lonestar shall pay an additional land fee of nine times the land fee specified for the area in 7.4.1. above. The additional water charge or land fee will be paid either in one lump sum, due and payable on July 1, immediately following the change in water use, or in twenty (20) equal semi-annual installments over ten (10) years, with the payment period and interest accrual beginning on that July 1, in the same manner as

prescribed for Lonestar's original annexation fee and subject to the same rules.

7.4.6. Additional annexation fee for Mitigation Plan water supply allocation. If a substitute supply of potable Mitigation Plan water is approved for the Lonestar Property pursuant to Section 22 of the MCWRA Act, then, when the contract for construction of the Mitigation Plan has been approved by the MCWRA Board of Supervisors, and when Lonestar begins using water for potable uses, Lonestar will pay as an addition to its annexation fee an additional water charge computed as two-thirds (2/3rds) of the product of the amount so allocated multiplied by the then-current annexation water charge. The additional water charge will be paid either in one lump sum, due and payable on July 1, immediately following approval of both the Mitigation Plan water supply for Lonestar and the construction contract for the Mitigation Plan, or in twenty (20) equal semi-annual installments over ten (10) years, with the payment period and the interest accrual beginning on that July 1, in the same manner as prescribed for Lonestar's original annexation fee and subject to the same rules.

7.4.7. Non-duplication of additional annexation fees. The additional annexation fees set forth in paragraphs 7.4.5 and 7.4.6 above are not intended to be cumulative. If Lonestar becomes liable to pay both of the additional annexation fees, then Lonestar shall be obligated to pay only the higher of the two fees, and any amounts previously paid towards the lower additional fees shall be credited towards payment of the higher.

8. TERMS AND CONDITIONS--GENERAL.

8.1. Equal treatment by MCWRA and MCWD. If future litigation, regulation or other unforeseen action diminishes the total water supply available to MCWRA, MCWRA agrees that it will exercise its powers so that MCWD, Armstrong and Lonestar shall be no more severely affected in a proportional sense than other lawful users of water from the Zones, based on the right before the imposition of any uniform and generally applicable restrictions as described in paragraph 8.2 to use at least the quantities of water from the Basin described in paragraphs 5.1., 6.9., and 7.2. MCWRA shall not at any time seek to impose greater restrictions on water use from the Basin by MCWD, Armstrong or Lonestar than are imposed on users either supplying water for use or using water within the city limits of the City of Salinas. MCWD, Armstrong and Lonestar will comply with any basin-wide or area-wide water allocation plans established by the MCWRA which include MCWD, Armstrong and Lonestar, and which do not impose on use of water on the lands described in Exhibits "B", "C", and "D" restrictions greater than are imposed on users either supplying water for use or using water within the City of Salinas, and which satisfy the requirements of paragraph 5.2 of this Agreement and Framework.

8.2. Water Conservation Measures. MCWD, Armstrong and Lonestar shall use, and MCWD may require the use of reasonable and appropriate water conservation measures on the lands described in Exhibits "B", "C" and "D" to this Agreement and Framework, which water conservation measures shall be uniformly applied and may be more restrictive but shall not be less restrictive than measures implemented by MCWRA as part of a Basin-wide or area-wide water conservation program. All planning and environmental review for the lands described in Exhibits "B", "C", and "D" to this Agreement and Framework shall be based on the requirement that development on such lands shall use reasonable and appropriate water conservation measures comparable to measures implemented by MCWRA as part of a Basin-wide or area-wide water conservation program, and by MCWD as part of a water conservation program applicable uniformly within MCWD's service area.

8.3. Defense of Rights. Upon Mitigation Plan Implementation, MCWRA will defend the rights of MCWD, Armstrong and Lonestar to a supply of water from the Mitigation Plan, as though those rights were the rights of MCWRA. Participation by MCWD, Armstrong and Lonestar in the Mitigation Plan or any other alternative water supply plan is subject to compliance with all applicable laws, including but not limited to CEQA.

8.4. Use of Annexation Fees. Annexation fees from the MCWD service area, the Armstrong Ranch and the Lonestar Property shall be used by MCWRA to pay the costs of a BMP process that includes mitigation plans for the Marina Area based on the planning guidelines contained in this Agreement and Framework. Such annexation fees shall also be used for management and protection of the "900-foot aquifer."

8.5. Assessments. After approval by the Board of Supervisors of annexation to the Zones of any property described in the exhibits to this Agreement and Framework, each parcel annexed shall be subject to all uniform assessments, charges, fees, and other exactions levied in Zones 2 and 2A for the fiscal year beginning on July 1, next succeeding the first March 1 after the effective date of the annexation, and shall remain subject thereto for as long as such exactions are levied and the parcel remains within the levying zone.

8.6. Recordation. Upon approval of this Agreement and Framework by the Board of Supervisors and execution by all Parties, this Agreement and Framework shall be recorded in the office of the Monterey County Recorder. All signatures shall be notarized as necessary to record the Agreement and Framework.

9. DISPUTE RESOLUTION PROCEDURE.

9.1. If any dispute arises between the Parties as to the proper interpretation or application of this Agreement and Framework, the Parties shall first seek to resolve the dispute in accordance with this Agreement and Framework, and the Parties must

meet and confer under this Agreement and Framework before filing any court action.

9.2. If any dispute under this Agreement and Framework arises, the Parties shall first meet and confer, in an attempt to resolve the matter between themselves. Each party shall make all reasonable efforts to provide to the other Parties all the information that the party has in its possession that is relevant to the dispute, so that all Parties will have ample information with which to reach a decision.

9.3. If, notwithstanding the good faith efforts of a party requesting in writing the resolution of a dispute under this Agreement and Framework, a dispute remains unresolved sixty-one (61) days after delivery of the request to the other party, the party requesting resolution may file suit for legal and equitable relief, including specific performance, as appropriate.

10. CHALLENGE OF LAWS. Nothing herein contained shall be construed as stopping or otherwise preventing any party to this Agreement and Framework from contesting by litigation or other lawful means the validity, constitutionality, construction, or application of any law of this State, any ordinance of the public entities that are Parties hereto, or any rule, regulation or practice of the public entities that are Parties hereto.

11. WAIVER OF RIGHTS. Any waiver at any time by any party hereto of its rights with respect to a default or any other matter arising in connection with this Agreement and Framework shall not be deemed to be a waiver with respect to any other default or matter. None of the covenants or agreements herein contained can be waived except by the written consent of the waiving party.

12. NOTICES. All notices and demands required under this Agreement and Framework shall be deemed given by one party when delivered personally to the principal office of the other party; when faxed to the other party, to the fax number provided by the receiving party; or five days after the document is placed in the United States mail, first class, registered mail, or certified mail, postage prepaid, addressed to the other party as follows:

To MCWD:	11 Reservation Road Marina, CA 93933-2099 Phone No.: (408) 384-6131 Fax No.: (408) 384-2479
----------	--

To MCWRA:	General Manager P. O. Box 930 Salinas, CA 93902-0930 Phone No.: (408) Fax No.: (408) 424-7935
-----------	---

To City:

City Manager
211 Hillcrest Avenue
Marina, CA 93933
Phone No.: (408) 384-3715
Fax No.: (408) 384-0425

To Armstrong:

John A. Armstrong
270 River Road
Salinas, CA 93908
Phone No.: (408) 455-1907
Fax No.: (408) 455-2817

To Lonestar:

RMC LONESTAR
Attention: Mr. John Rubiales
P.O. Box 5252
Pleasanton, CA 94566
Phone No.: (510) 426-8787
Fax No.: (510) 426-2225

The address or fax number to which any notice or other writing may be given or made or sent to any party may be changed upon written notice given by such party as above provided.

13. SEVERABILITY. If any one or more of the covenants or agreements set forth in this Agreement and Framework on the part of MCWRA, MCWD, City, Armstrong or Lonestar, or any of them, to be performed should be contrary to any provision of law or contrary to the policy of law to such extent as to be unenforceable in any court of competent jurisdiction, then such covenant or covenants, agreement or agreements, shall be null and void and shall be deemed separable from the remaining covenants and agreements and shall in no way affect the validity of this Agreement and Framework; provided, that if voiding of such individual covenants or agreements without voiding the whole agreement would frustrate a material purpose of Lonestar in entering into this Agreement and Framework, then this whole Agreement and Framework shall be null and void ab initio as to Lonestar only.

14. PARAGRAPH HEADINGS. Paragraph headings in this Agreement and Framework are for convenience only and are not to be construed as a part of this Agreement and Framework or in any way limiting or amplifying the provisions hereof.

15. SUCCESSORS AND ASSIGNS. This Agreement and Framework and all the terms, covenants, agreements and conditions herein contained shall inure to the benefit of and be binding upon the successors and assigns of the Parties hereto.

16. ADMINISTRATORS. MCWD and MCWRA hereby designate their respective General Managers as their Administrators for this Agreement and Framework. City designates its City Manager as City's Agreement and Framework Administrator. Armstrong designates Mr. John A. Armstrong as its Agreement and Framework Administrator. Lonestar designates Mr. John Rubiales as its Agreement and

Framework Administrator. All matters concerning this Agreement and Framework shall be submitted to the Agreement and Framework Administrators or such other representatives as the Agreement and Framework Administrators may designate for their respective agencies. Any party may, in its sole discretion, change its designation of the Agreement and Framework administrator and shall promptly give written notice to the other Parties of any such change.

17. NEGOTIATED AGREEMENT AND FRAMEWORK. This Agreement and Framework has been arrived at through negotiation between the Parties. Neither party is to be deemed the party which prepared this Agreement and Framework within the meaning of Civil Code section 1654.

18. AMENDMENT. This Agreement and Framework may be amended only by a writing signed by the Parties affected by the amendment.

19. COUNTERPARTS. This Agreement and Framework may be executed in counterparts. Each fully executed counterpart shall be deemed a duplicate original, and all counterparts which together contain the signatures of all the Parties shall be deemed, when attached together, one complete and integrated original document.


20. ADDENDUM. A form of Addendum for the MRWPCA is attached hereto as Exhibit "G." When the Addendum is fully executed in its present form or in an amended form, it shall be attached to this Agreement and Framework as an integral part of this Agreement and Framework, and the provisions of the Addendum shall be deemed specifically and fully incorporated into this Agreement and Framework by this reference.

IN WITNESS WHEREOF, the Parties execute this Agreement and Framework as follows:

Dated: March 26, 1996

MONTEREY COUNTY WATER RESOURCES
AGENCY

By



Edith Johnsen
Chair, Board of Supervisors

Dated: _____, 1996

MARINA COAST WATER DISTRICT

By

Thomas P. Moore
President, Board of Directors

By

Malcolm D. Crawford
Secretary, Board of Directors

STATE OF CALIFORNIA)
COUNTY OF MONTEREY) ss.

On this 26th day of March, 1996, before me, Ernest K. Morishita, Clerk of the Board of Supervisors, in and for said County and State, personally appeared Edith Johnson, known to me to be the Chairperson of said Board of Supervisors of the County of Monterey, and known to me to be the person who executed the within instrument on behalf of said political subdivision, and acknowledged to me that such County of Monterey executed the same.

ERNEST K. MORISHITA, Clerk of the
Board of Supervisors of Monterey
County, State of California

By: Ramela Olivas
Deputy Clerk

Framework Administrator. All matters concerning this Agreement and Framework shall be submitted to the Agreement and Framework Administrators or such other representatives as the Agreement and Framework Administrators may designate for their respective agencies. Any party may, in its sole discretion, change its designation of the Agreement and Framework administrator and shall promptly give written notice to the other Parties of any such change.

17. NEGOTIATED AGREEMENT AND FRAMEWORK. This Agreement and Framework has been arrived at through negotiation between the Parties. Neither party is to be deemed the party which prepared this Agreement and Framework within the meaning of Civil Code section 1654.

18. AMENDMENT. This Agreement and Framework may be amended only by a writing signed by the Parties affected by the amendment.

19. COUNTERPARTS. This Agreement and Framework may be executed in counterparts. Each fully executed counterpart shall be deemed a duplicate original, and all counterparts which together contain the signatures of all the Parties shall be deemed, when attached together, one complete and integrated original document.

20. ADDENDUM. A form of Addendum for the MRWPCA is attached hereto as Exhibit "G." When the Addendum is fully executed in its present form or in an amended form, it shall be attached to this Agreement and Framework as an integral part of this Agreement and Framework, and the provisions of the Addendum shall be deemed specifically and fully incorporated into this Agreement and Framework by this reference.

IN WITNESS WHEREOF, the Parties execute this Agreement and Framework as follows:

Dated: _____, 1996

MONTEREY COUNTY WATER RESOURCES
AGENCY

By _____

Edith Johnsen
Chair, Board of Supervisors

Dated: April - 12, 1996

MARINA COAST WATER DISTRICT

By _____

Thomas P. Moore
Thomas P. Moore
President, Board of Directors

By _____

Malcolm D. Crawford
Malcolm D. Crawford
Secretary, Board of Directors

Dated: Apr 18, 1996

Max Armstrong
MAX MAX ARMSTRONG

Dated: _____, 1996

THE SANDRA ARMSTRONG MURRAY
REVOCABLE TRUST UTA dated March 7,
1989

By _____
DARRELL L. MURRAY, Trustee

Dated: _____, 1996

THE LOIS AND CLYDE JOHNSON, JR.,
1989 IRREVOCABLE TRUST

By _____
CLYDE W. JOHNSON III, Trustee

Dated: _____, 1996

THE JOHNSON FAMILY REVOCABLE LIVING
TRUST UTA dated November 29, 1989

By _____
CLYDE W. JOHNSON III, Trustee

Dated: _____, 1996

CLYDE W. JOHNSON III

Dated: _____, 1996

EDWIN A. JOHNSON

Dated: Mar 29, 1996

John A. Armstrong II
JOHN A. ARMSTRONG II

Dated: _____, 1996

SUSANNE IRVINE ARMSTRONG

Dated: Mar. 29, 1996

James Irvine Armstrong, Jr.
JAMES IRVINE ARMSTRONG, JR.

Dated: _____, 1996

JAY MAX ARMSTRONG

Dated: _____, 1996

THE SANDRA ARMSTRONG MURRAY
REVOCABLE TRUST UTA dated March 7,
1989

By  4/4/96

DARRELL L. MURRAY, Trustee

Dated: _____, 1996

THE LOIS AND CLYDE JOHNSON, JR.,
1989 IRREVOCABLE TRUST

By _____
CLYDE W. JOHNSON III, Trustee

Dated: _____, 1996

THE JOHNSON FAMILY REVOCABLE LIVING
TRUST UTA dated November 29, 1989

By _____
CLYDE W. JOHNSON III, Trustee

Dated: _____, 1996

CLYDE W. JOHNSON III

Dated: _____, 1996

EDWIN A. JOHNSON

Dated: Mar 29, 1996

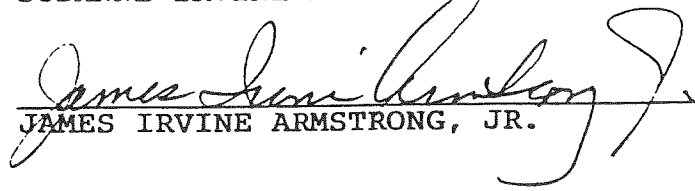


JOHN A. ARMSTRONG II

Dated: _____, 1996

SUSANNE IRVINE ARMSTRONG

Dated: Mar. 29, 1996



JAMES IRVINE ARMSTRONG, JR.

Dated: _____, 1996

JAY MAX ARMSTRONG

Dated: _____, 1996

THE SANDRA ARMSTRONG MURRAY
REVOCABLE TRUST UTA dated March 7,
1989

By DARRELL L. MURRAY, Trustee

Dated: 4-4-, 1996

THE LOIS AND CLYDE JOHNSON, JR.,
1989 IRREVOCABLE TRUST

By Clyde W. Johnson III Trustee
CLYDE W. JOHNSON III, Trustee

Dated: 4-4, 1996

THE JOHNSON FAMILY REVOCABLE LIVING
TRUST UTA dated November 29, 1989

By Clyde W. Johnson III Trustee
CLYDE W. JOHNSON III, Trustee

Dated: 4-4, 1996

Clyde W. Johnson III
CLYDE W. JOHNSON III

Dated: 4-4, 1996

Edwin A. Johnson
EDWIN A. JOHNSON

Dated: Mar 29, 1996

John A. Armstrong II
JOHN A. ARMSTRONG II

Dated: _____, 1996

SUSANNE IRVINE ARMSTRONG

Dated: Mar. 29, 1996

JAMES IRVINE ARMSTRONG, JR.

Dated: _____, 1996

JAY MAX ARMSTRONG

Dated: _____, 1996

THE SANDRA ARMSTRONG MURRAY
REVOCABLE TRUST UTA dated March 7,
1989

By _____
DARRELL L. MURRAY, Trustee

Dated: _____, 1996

THE LOIS AND CLYDE JOHNSON, JR.,
1989 IRREVOCABLE TRUST

By _____
CLYDE W. JOHNSON III, Trustee

Dated: _____, 1996

THE JOHNSON FAMILY REVOCABLE LIVING
TRUST UTA dated November 29, 1989

By _____
CLYDE W. JOHNSON III, Trustee

Dated: _____, 1996

CLYDE W. JOHNSON III

Dated: _____, 1996

EDWIN A. JOHNSON

Dated: Mar 29, 1996

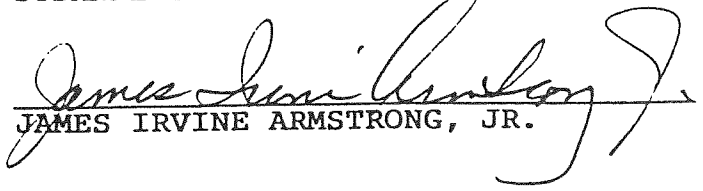


JOHN A. ARMSTRONG II

Dated: _____, 1996

SUSANNE IRVINE ARMSTRONG

Dated: Mar. 29, 1996



JAMES IRVINE ARMSTRONG, JR.

Dated: _____, 1996

JAY MAX ARMSTRONG

Dated: _____, 1996

THE SANDRA ARMSTRONG MURRAY
REVOCABLE TRUST UTA dated March 7,
1989

By _____

DARRELL L. MURRAY, Trustee

Dated: _____, 1996

THE LOIS AND CLYDE JOHNSON, JR.,
1989 IRREVOCABLE TRUST

By _____

CLYDE W. JOHNSON III, Trustee

Dated: _____, 1996

THE JOHNSON FAMILY REVOCABLE LIVING
TRUST UTA dated November 29, 1989

By _____

CLYDE W. JOHNSON III, Trustee

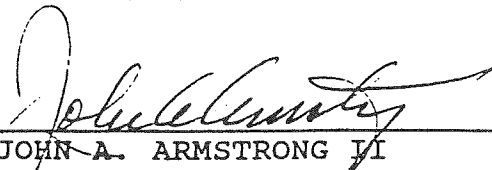
Dated: _____, 1996

CLYDE W. JOHNSON III

Dated: _____, 1996

EDWIN A. JOHNSON

Dated: Mar 29, 1996



JOHN A. ARMSTRONG II

Dated: _____, 1996



SUSANNE IRVINE ARMSTRONG

Dated: Mar. 29, 1996



JAMES IRVINE ARMSTRONG, JR.

SUSANNE IRVINE ARMSTRONG, JAMES IRVINE ARMSTRONG, JR., and JOHN A. ARMSTRONG II, as Trustees of the Trust for the benefit of MARY JANET ARMSTRONG WEBER as set forth in the Order Settling Report of Trustees due to the death of Lois Armstrong, etc., in the Estate of Irvine Armstrong, also known as James Irvine Armstrong, Deceased, recorded January 4, 1988, in Reel 2191, Official Records of Monterey County at page 643 therein (hereinafter referred to as the "Mary Janet Armstrong Weber Trust")

Dated: Apr. 4, 1996

Susanne Irvine Armstrong
SUSANNE IRVINE ARMSTRONG, Trustee

Dated: Mar 29, 1996

By John A. Armstrong II
JOHN A. ARMSTRONG II, Trustee

Dated: Mar. 29, 1996

By James Irvine Armstrong, Jr.
JAMES IRVINE ARMSTRONG, JR., Trustee

Dated: _____, 1996

THE 1990 ARMSTRONG FAMILY TRUST
established by Declaration dated
July 2, 1990

By _____
Walter J. McCullough

By _____
Elizabeth S. Armstrong

Dated: _____, 1996

RMC LONESTAR, a California general
partnership

By _____

Dated: _____, 1996

CITY OF MARINA

By _____
James L. Vocolka, Mayor

SUSANNE IRVINE ARMSTRONG, JAMES
IRVINE ARMSTRONG, JR., and JOHN A.
ARMSTRONG II, as Trustees of the
Trust for the benefit of MARY JANET
ARMSTRONG WEBER as set forth in the
Order Settling Report of Trustees
due to the death of Lois Armstrong,
etc., in the Estate of Irvine
Armstrong, also known as James
Irvine Armstrong, Deceased,
recorded January 4, 1988, in Reel
2191, Official Records of Monterey
County at page 643 therein
(hereinafter referred to as the
"Mary Janet Armstrong Weber Trust")

Dated: _____, 1996

By _____
SUSANNE IRVINE ARMSTRONG, Trustee

Dated: Mar. 29, 1996

By John A. Armstrong II
JOHN A. ARMSTRONG II, Trustee

Dated: Mar. 29, 1996

By James Irvine Armstrong, Jr.
JAMES IRVINE ARMSTRONG, JR., Trustee

Dated: _____, 1996

THE 1990 ARMSTRONG FAMILY TRUST
established by Declaration dated
July 2, 1990

By _____
Walter J. McCullough

By _____
Elizabeth S. Armstrong

Dated: _____, 1996

RMC LONESTAR, a California general
partnership

By _____

Dated: _____, 1996

CITY OF MARINA

By _____
James L. Vocolka, Mayor

SUSANNE IRVINE ARMSTRONG, JAMES IRVINE ARMSTRONG, JR., and JOHN A. ARMSTRONG II, as Trustees of the Trust for the benefit of MARY JANET ARMSTRONG WEBER as set forth in the Order Settling Report of Trustees due to the death of Lois Armstrong, etc., in the Estate of Irvine Armstrong, also known as James Irvine Armstrong, Deceased, recorded January 4, 1988, in Reel 2191, Official Records of Monterey County at page 643 therein (hereinafter referred to as the "Mary Janet Armstrong Weber Trust")

Dated: _____, 1996

By _____
SUSANNE IRVINE ARMSTRONG, Trustee

Dated: Mar. 29, 1996

By John A. Armstrong II
JOHN A. ARMSTRONG II, Trustee

Dated: Mar. 29, 1996

By James Irvine Armstrong, Jr.
JAMES IRVINE ARMSTRONG, JR., Trustee

Dated: _____, 1996

THE 1990 ARMSTRONG FAMILY TRUST
established by Declaration dated
July 2, 1990

By Walter J. McCullough
Walter J. McCullough

By Elizabeth S. Armstrong
Elizabeth S. Armstrong

Dated: _____, 1996

RMC LONESTAR, a California general
partnership

By _____

Dated: _____, 1996

CITY OF MARINA

By _____
James L. Vocelka, Mayor

Dated: _____, 1996

SUSANNE IRVINE ARMSTRONG, JAMES IRVINE ARMSTRONG, JR., and JOHN A. ARMSTRONG II, as Trustees of the Trust for the benefit of MARY JANET ARMSTRONG WEBER as set forth in the Order Settling Report of Trustees due to the death of Lois Armstrong, etc., in the Estate of Irvine Armstrong, also known as James Irvine Armstrong, Deceased, recorded January 4, 1988, in Reel 2191, Official Records of Monterey County at page 643 therein (hereinafter referred to as the "Mary Janet Armstrong Weber Trust")

By _____, Trustee

Dated: _____, 1996

JAMES IRVINE ARMSTRONG, JR. :

Dated: _____, 1996

THE 1990 ARMSTRONG FAMILY TRUST established by Declaration dated July 2, 1990

By _____
Walter J. McCullough

By _____
Elizabeth S. Armstrong

Dated: MAR 26, 1996

RMC LONESTAR, a California general partnership

By Ronald Z. Blick

Dated: _____, 1996

CITY OF MARINA

By _____
James L. Vocolka, Mayor

Dated: _____, 1996

SUSANNE IRVINE ARMSTRONG, JAMES IRVINE ARMSTRONG, JR., and JOHN A. ARMSTRONG II, as Trustees of the Trust for the benefit of MARY JANET ARMSTRONG WEBER as set forth in the Order Settling Report of Trustees due to the death of Lois Armstrong, etc., in the Estate of Irvine Armstrong, also known as James Irvine Armstrong, Deceased, recorded January 4, 1988, in Reel 2191, Official Records of Monterey County at page 643 therein (hereinafter referred to as the "Mary Janet Armstrong Weber Trust")

By _____,
_____, Trustee

Dated: _____, 1996

JAMES IRVINE ARMSTRONG, JR.

Dated: _____, 1996

THE 1990 ARMSTRONG FAMILY TRUST established by Declaration dated July 2, 1990

By _____
Walter J. McCullough

By _____
Elizabeth S. Armstrong

Dated: _____, 1996

RMC LONESTAR, a California general partnership

Dated: 4/8/96, 1996

By _____
CITY OF MARINA

By _____
James L. Vocelka, Mayor

APPROVED AS TO FORM:

Dated: 8/5, 1996

William K. Rentz
WILLIAM K. RENTZ
Deputy County Counsel, Monterey
County

Dated: _____, 1996

NOLAND, HAMERLY, ETIENNE & HOSS
A Professional Corporation

By _____
Lloyd W. Lowrey, Jr.
Legal Counsel for MARINA COAST
WATER DISTRICT

Dated: _____, 1996

ROBERT R. WELLINGTON
Legal Counsel for CITY OF MARINA

Dated: _____, 1996

THOMPSON, HUBBARD & OMETER
A Law Corporation

By _____
Donald G. Hubbard
Legal Counsel for J.G. ARMSTRONG
FAMILY MEMBERS

Dated: _____, 1996

PILLSBURY, MADISON AND SUTRO

By _____
Thomas P. O'Donnell
Legal Counsel for RMC LONESTAR

APPROVED AS TO FORM:

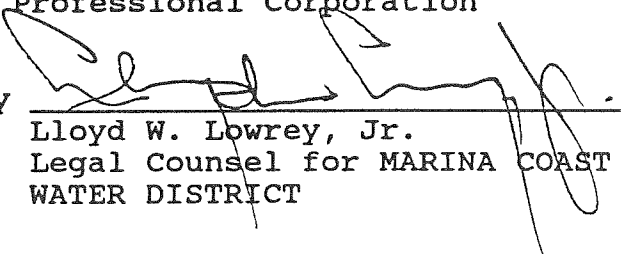
Dated: _____, 1996

WILLIAM K. RENTZ
Deputy County Counsel, Monterey
County

Dated: March 26, 1996

NOLAND, HAMERLY, ETIENNE & HOSS
A Professional Corporation

By



Lloyd W. Lowrey, Jr.
Legal Counsel for MARINA COAST
WATER DISTRICT

Dated: _____, 1996

ROBERT R. WELLINGTON
Legal Counsel for CITY OF MARINA

Dated: _____, 1996

THOMPSON, HUBBARD & OMETER
A Law Corporation

By

Donald G. Hubbard
Legal Counsel for J.G. ARMSTRONG
FAMILY MEMBERS

Dated: _____, 1996

PILLSBURY, MADISON AND SUTRO

By

Thomas P. O'Donnell
Legal Counsel for RMC LONESTAR

APPROVED AS TO FORM:

Dated: _____, 1996

WILLIAM K. RENTZ
Deputy County Counsel, Monterey
County

Dated: _____, 1996

NOLAND, HAMERLY, ETIENNE & HOSS
A Professional Corporation

By _____

Lloyd W. Lowrey, Jr.
Legal Counsel for MARINA COAST
WATER DISTRICT

Dated: July 29, 1996

Robert R. Wellington
Legal Counsel for CITY OF MARINA

Dated: _____, 1996

THOMPSON, HUBBARD & OMETER
A Law Corporation

By _____

Donald G. Hubbard
Legal Counsel for J.G. ARMSTRONG
FAMILY MEMBERS

Dated: _____, 1996

PILLSBURY, MADISON AND SUTRO

By _____

Thomas P. O'Donnell
Legal Counsel for RMC LONESTAR

APPROVED AS TO FORM:

Dated: _____, 1996

WILLIAM K. RENTZ
Deputy County Counsel, Monterey
County

Dated: _____, 1996

NOLAND, HAMERLY, ETIENNE & HOSS
A Professional Corporation

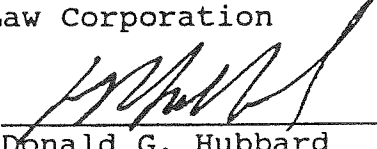
By _____
Lloyd W. Lowrey, Jr.
Legal Counsel for MARINA COAST
WATER DISTRICT

Dated: _____, 1996

ROBERT R. WELLINGTON
Legal Counsel for CITY OF MARINA

Dated: MARCH 29, 1996

THOMPSON, HUBBARD & OMETER
A Law Corporation

By  _____
Donald G. Hubbard
Legal Counsel for J.G. ARMSTRONG
FAMILY MEMBERS

Dated: _____, 1996

PILLSBURY, MADISON AND SUTRO

By _____
Thomas P. O'Donnell
Legal Counsel for RMC LONESTAR

APPROVED AS TO FORM:

Dated: _____, 1996

WILLIAM K. RENTZ
Deputy County Counsel, Monterey
County

Dated: _____, 1996

NOLAND, HAMERLY, ETIENNE & HOSS
A Professional Corporation

By _____
Lloyd W. Lowrey, Jr.
Legal Counsel for MARINA COAST
WATER DISTRICT

Dated: _____, 1996

ROBERT R. WELLINGTON
Legal Counsel for CITY OF MARINA

Dated: _____, 1996

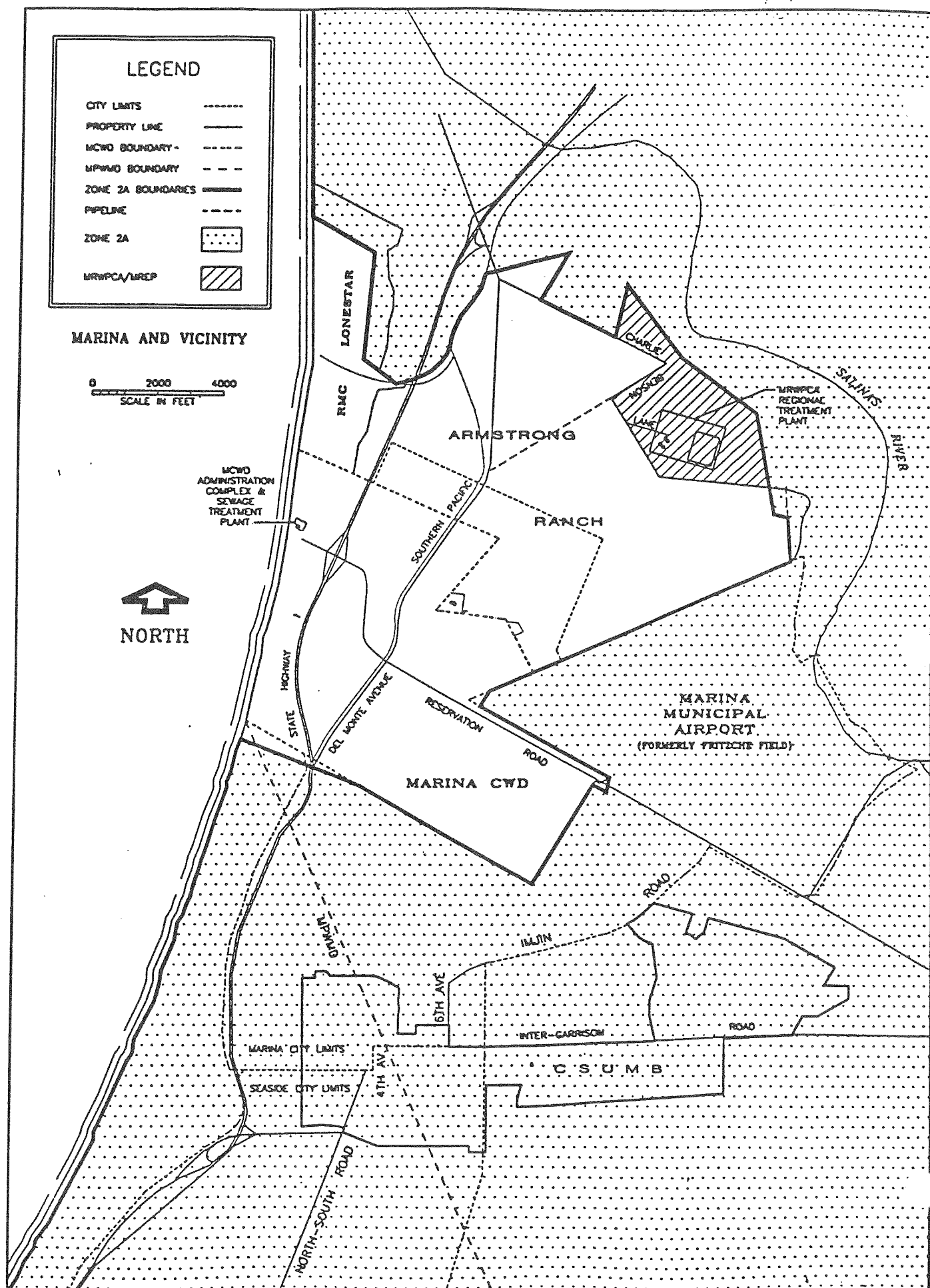
THOMPSON, HUBBARD & OMETER
A Law Corporation

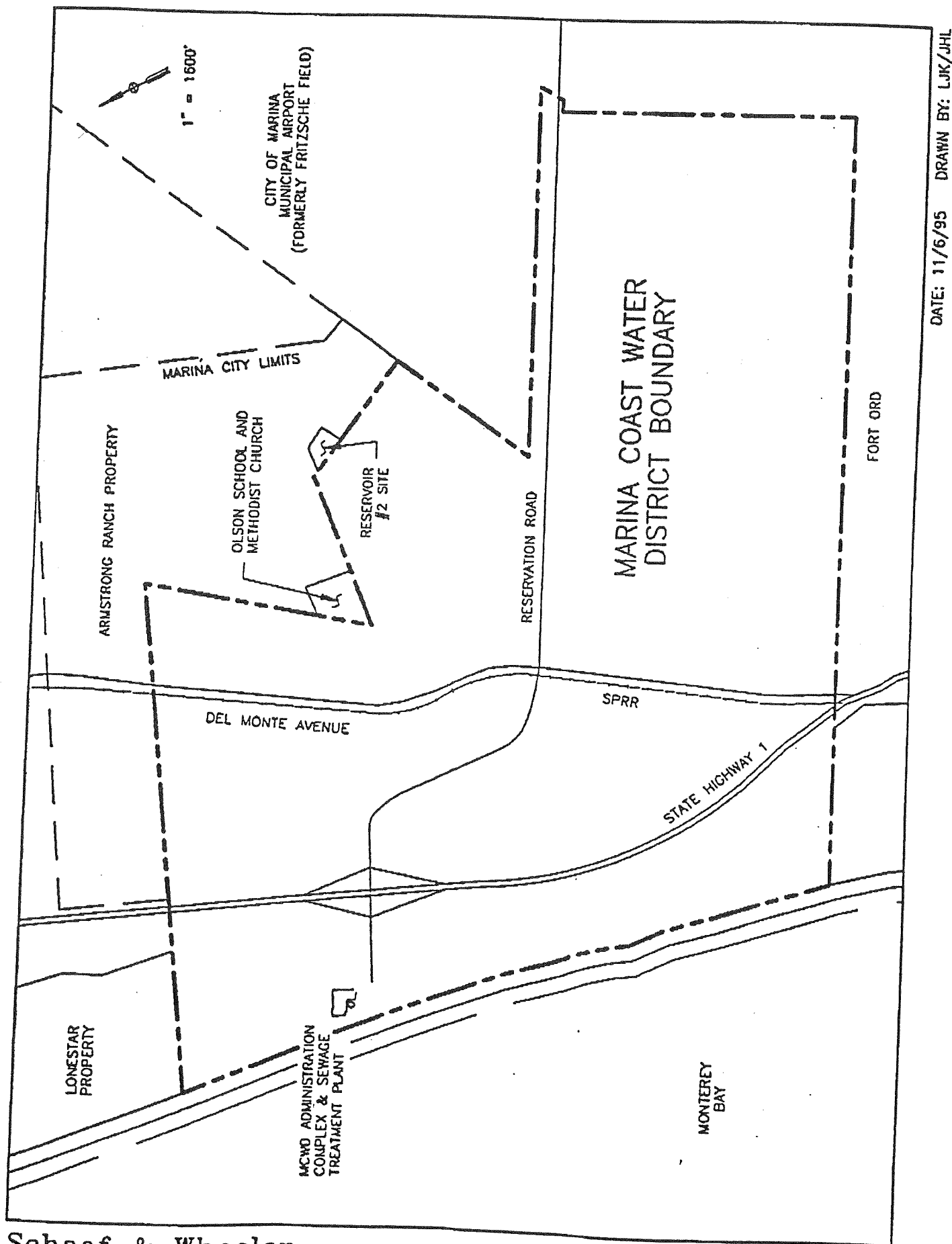
By _____
Donald G. Hubbard
Legal Counsel for J.G. ARMSTRONG
FAMILY MEMBERS

Dated: March 26, 1996

Thomas P. O'Donnell
~~PILLSBURY, MADISON AND SUTRO~~ *Group LLP*

By *Thomas P. O'Donnell*
Thomas P. O'Donnell
Legal Counsel for RMC LONESTAR

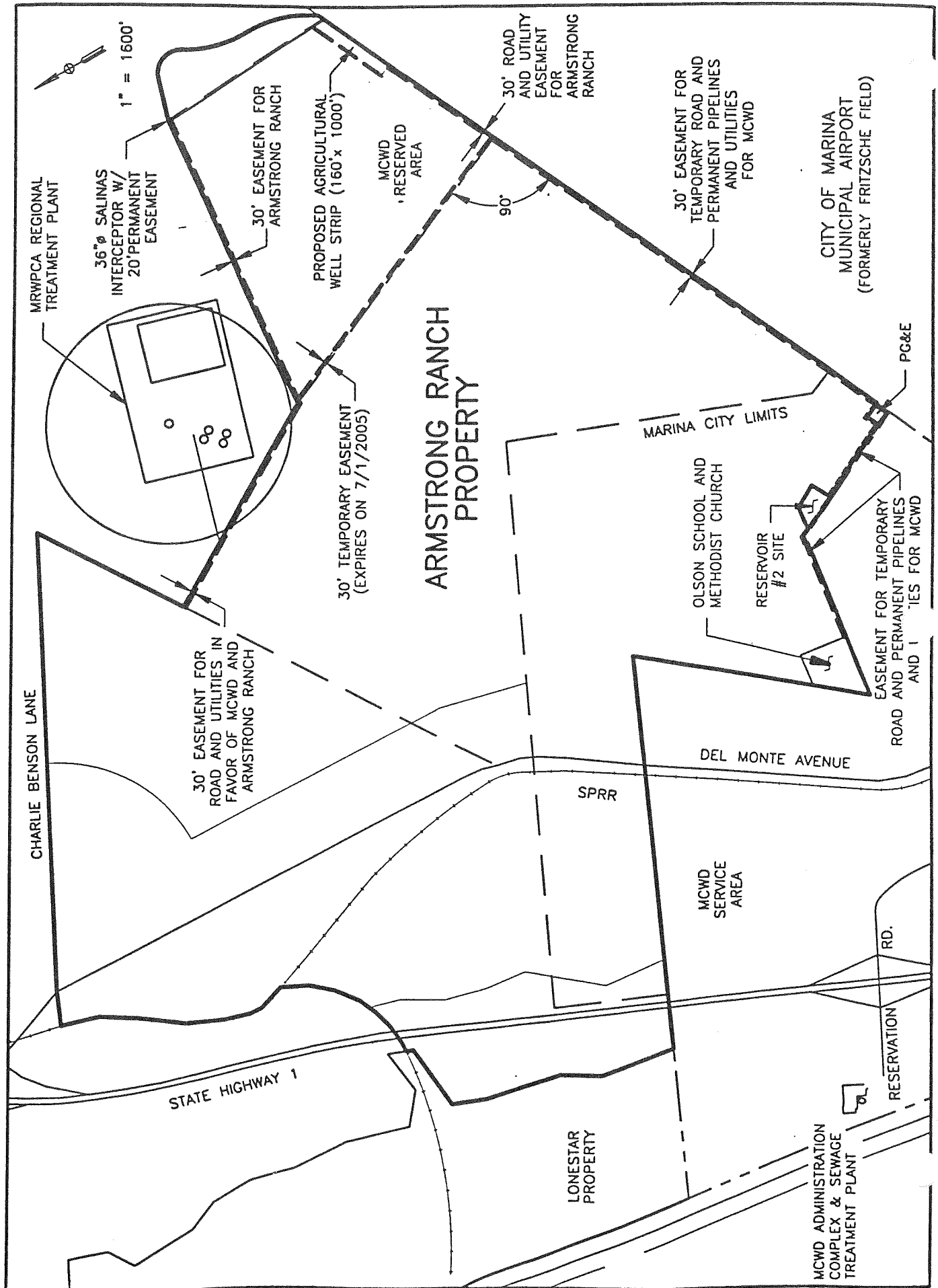




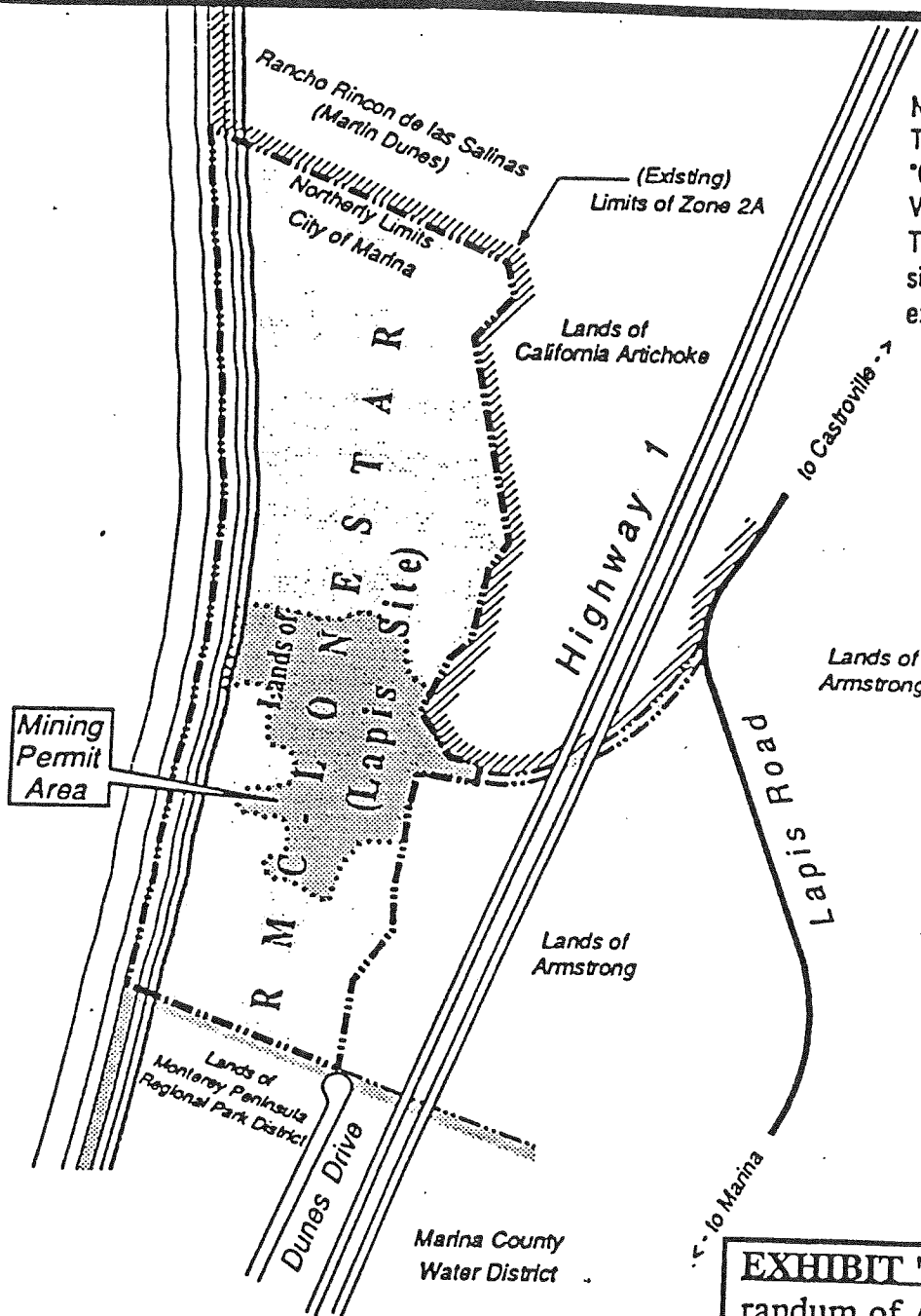
DATE: 11/6/95 DRAWN BY: LJK/JHL

Schaaf & Wheeler

EXHIBIT "R"



Monterey Bay



VICINITY MAP

EXHIBIT "D" to Memorandum of Agreement:
"Lonestar Property to be Annexed."

Grant Deed

Grant deed dated April 22, 1929
recorded August 29, 1929
Volume 204 Official Records, at page 127.
(See Exhibit D1 for Legal Description)

Assessor's Parcel Numbers

203-011-01
203-011-16
203-011-17
203-011-19
203-011-20

EXHIBIT "D1"

LEGAL DESCRIPTION - LANDS OF RMC-LONESTAR

(based on preliminary report from Western Title
Insurance Company dated December 12, 1986)

Said land is situate in the County of Monterey, State of California, and is described as follows:

PARCEL 1

A part of Monterey City Lands Tract No. 1 embracing the sand dunes along the shore of Monterey Bay, described as follows, to-wit:

BEGINNING at the common corner of the Rancho Rincon de las Salinas and the Monterey City Lands Tract No. 1 on the shore of Monterey Bay, from which an old Four inch by Four inch post marked "R S 3 Wit" standing on Rancho boundary bears South 63° 20' East Twelve and 79/100 chains distant; thence Variation 16° 50' East, following the shore line of bay South 1° 05' West Sixty and 00/100 chains to station; thence South 5° 40' West Thirty-three and 00/100 chains to station; thence South 11° 30' West Thirty-one and 02/100 chains to the Northerly boundary of the land of David Jacks; thence leaving the shore of the Monterey Bay and following the fence along the Northerly line of the land of David Jacks Corporation South 65° 30' East, Twenty-three and 61/100 chains to station; thence South 65° 12' East Five and 31/100 chains a Four inch by Four inch post marked "E. B. & A. L. S. Cor. No. 1" standing at the foot of sand hills and at the Easterly side thereof, Seven and 23/100 chains to station from which the point of intersection of Jacks boundary fence with the center line of the S. P. R. R. at station 281 plus Fifty-one and 6/10 bears South 65° 12' East Fifty-one and 73/100 chains distant; thence leaving the Jacks boundary and following the old fence skirting the Easterly side of sand dunes North 7° 30' East Eleven and 00/100 chains; thence North 15° 15' East Five and 87/100 chains to station; thence North 34° East Six and 92/100 chains to station; thence North 11° 30' East One and 00/100 chains to station; thence North 5° 45' West Five and 18/100 chains to station; thence North 12° 15' East Five and 66/100 chains to station; thence North 4° West 3 and 60/100 chains to station; thence North 34° East One and 27/100 chains to station; thence North 14° 30 East Three and 29/100 chains to station; thence North 6° 45' West Three and 83/100 chains to center line of Lapis Spur track; thence North 0° 15' East Five and 51/100 chains to station; thence North 22° 30' East Four and 10/100 chains to station; thence North 16° 45' East Five and 05/100 chains to station; thence North 34° East Four and 17/100 chains to station; thence North 13° East Ten and 15/100 chains to station; thence North 30° 45' East Two and 45/100 chains to

EXHIBIT "D1"

Page 2 of 3

station; thence North 13° 40' East Two and 72/100 chains to an old fence corner; thence North 9° 35' West One and 83/100 chains to station 17; thence North 9° 35' West Twenty-seven and 60/100 chains to station 18; thence North 32° 40' East Five and 21/100 chains to station 19; thence North 70° East Two and 27/100 chains to station 20; thence North 46° 50' East Two and 16/100 chains to station 21; thence North 12° 45' West Three and 05/100 chains to station 22; thence North 26° 30' East One and 92/100 chains to a Four inch by Four inch post marked E. B. & A. L. S. Cor. No. 23" standing in the fence on the line between the Monterey City Lands and the Rancho Rincon de las Salinas, thence leaving foot of sand hills and following said line fence across same North 63° 20' West Forty-two and 02/100 chains to the place of beginning.

PARCEL 2

All those certain lots, pieces or parcels of land situate, lying and being in the County of Monterey, State of California, described as follows:

A PART of Monterey City Lands Tract No. 1, described as follows:

A strip of land one hundred feet wide measured at right angles to and lying fifty feet on each side of a line located and described as follows:

BEGINNING at a point on the Eastern boundary of the piece of land here-in-before described as Parcel 1, said point bearing North 6° 45' West from station numbered 9 on said boundary line and distant Two hundred fifty-two and 5/10 feet therefrom thence by a straight line bearing South 77° 29' East Five hundred seventy-nine and 38/100 feet; thence by a 6° 00' curve to the left (radius 955.04 feet), Five hundred seventy-six and 81/100 feet; thence by a straight line bearing North 67° 54-1/2' East Six hundred forty-eight and 08/100 feet; thence by a 5° 00' curve to the left (radius 1146.01 feet) Eleven hundred thirty-nine and 2/10 feet, more or less, to the Western line of the Southern Pacific Company's Railroad right of way.

EXCEPTING THEREFROM that portion conveyed to the State of California by deed dated May 31, 1974 and recorded August 19, 1974, on Reel 930, Official Records, at page 909, Monterey County Records.

PARCEL 3

All those certain lots, pieces or parcels of land situate, lying and being in the County of Monterey, State of California, described as follows:

All that portion of Monterey City Lands Tract No. 1 lying between the Western boundary line of Parcel 1 of the property described in the deed from John A. Armstrong et al, to E. B. & A. L. Stone Company, a corporation, dated January 24, 1907, and recorded January 24, 1907 in Liber 95 of Deeds, page 388, and the Western boundary line of the property patented to the City of Monterey, by patent, dated November 19, 1891, and recorded November 16, 1896 in Liber "F" of patents at page 178.

PARCEL 4

All those certain lots, pieces or parcels of land situate, lying and being in the County of Monterey, State of California, described as follows:

All that part of Monterey City Lands Tract No. 1 described as follows:

BEGINNING at a Four inch by Four inch post marked "B 6" standing in the Eastern Boundary of the certain 399.70 acre tract conveyed by J. G. Armstrong Co., a corporation, to the E. B. & A. L. Stone Co., a corporation by deed dated January 31, 1911, and recorded in volume 117, of Deeds at page 283, Monterey County Records, from which station 9 of said boundary bears South 6° 45' East one hundred ninety-five and 08/100 feet distant; thence along said Eastern boundary North 6° 45' West Fifty-seven and 7/10 feet to a station in center line of one hundred foot right of way as shown in above mentioned deed; thence North 0° 15' East, still along said Eastern boundary three hundred sixty-three and 6/10 feet to a station; thence North 22° 30' East one hundred seven and 0/10 feet to a four inch by four inch post marked "B 1" in said Eastern boundary; thence leave said boundary South 29° 50' East three hundred ninety-two and 2/10 feet to a four inch by four inch post marked "b 2"; thence South 45° 29' East one hundred thirty-one and 0/10 feet to a four inch by four inch post marked "B 3"; thence South 77° 40' East two hundred seventy-six and 0/10 feet to a four inch by four inch post marked "B 4"; thence South 12° 20' West, at fourth-nine and 9/10 feet to the Northern line of above mentioned one hundred foot right of way at one hundred forty-nine and 9/10 feet the Southern line of same, one hundred fifty-five and 0/10 feet to a four inch by four inch post marked "b 5", thence North 77° 40' West, five feet southerly of and parallel with the Southern line of said right of way five hundred seventy-four and 3/10 feet to the place of beginning.

Courses all true variation of magnetic needle being 17° 15' East. Surveyed by Cozzens & Davies, Salinas, California, March 1922

EXHIBIT E
ELEMENTS OF YEARLY INCREMENTAL COSTS
FOR ADD-ON OF RECLAIMED WATER FOR M & I PUROSES OVER AND ABOVE
THAT COMMITTED TO THE CASTROVILLE SEAWATER IRRIGATION PROJECT

- 1) Operation and Maintenance (O&M) Element of costs to provide tertiary treatment (in \$/acre-foot for the year of 2). Costs for the previous year will be used to estimate the next year costs. An adjustment will be included in the following year to reflect actual costs. The next year flow volume demand for MCWD will be based on a projection submitted by the MCWD to the MCWRA by June 30, three months before delivery of next year reclaimed water to the MCWD reservoir.

- Chemical costs • Power costs • Sludge management costs • Labor costs • Repair and replacement costs

$$\text{O\&M ELEMENT (in \$ / acre-foot)} = \frac{\sum \text{chemicals} + \text{power} + \text{sludge mgmt.} + \text{labor} + \text{repair \& replacement costs}}{\text{Projected Next Year Flow Volume Demand [CSIP(afy) + MCWD(afy)]}} \pm \text{adjustment for previous year}$$

- 2) Bureau of Reclamation Loan Element (BRLE). Includes Reimbursible Interest During Construction (RIDC) and Emergency Reserve Fund Contribution (ERFC) in \$ / acre-foot for the year of 2.

$$\text{APPLICABLE ANNUAL PERCENTAGE for M\&I (AAPM\&I)} =$$

$$\frac{\text{Projected next year flow volume demand for MCWD (afy)}}{\text{Projected Next Year Flow Volume Demand [CSIP(afy) + MCWD(afy)]}}$$

$$\text{BRLE(\$) FOR YEAR (?) = } \frac{\text{AAPM\&I} \times [\text{PRINCIPAL} + \text{INTEREST}(7.625\%) \text{ ON OUTSTANDING PRINCIPAL} + \text{RIDC} + \text{ERFC FOR YEAR(?)I}]}{\text{Projected next year flow volume demand for MCWD (afy)}}$$

- 3) Increased capital cost element to cover M&I for the MCWD.

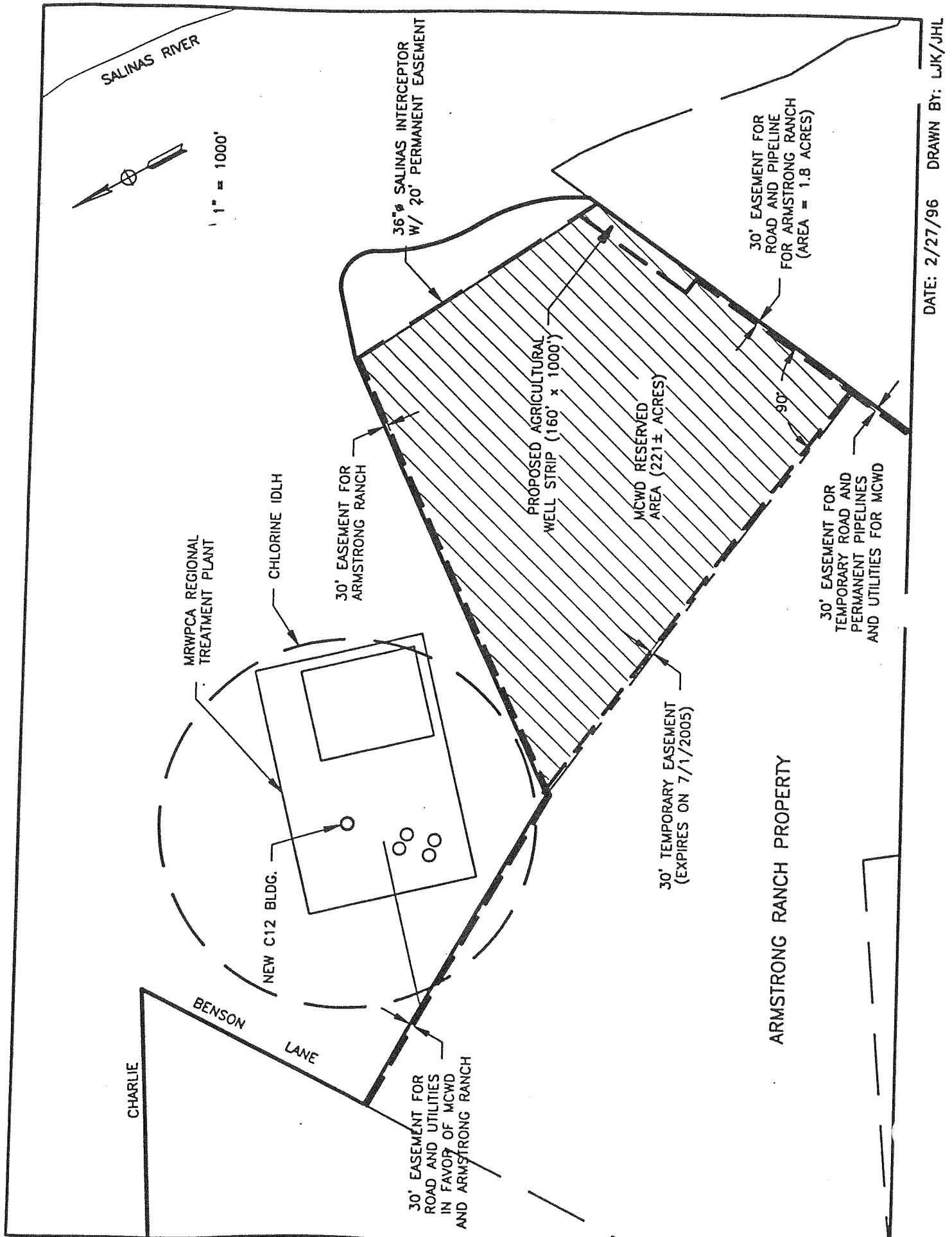
No additional capital costs.

- 4) Capital Risk Share Element (CRSE) in \$ / acre-foot for the year of 2.

$$\text{CRSE (\$)} = \frac{\text{AAPM\&I} \times [\text{SVRP Debt Service for State Revolving Fund(Schedule A Line 18)} + \frac{1}{3} \text{ of Bonds (Schedule A, Line 25) FOR YEAR(?)I}]}{\text{Projected next year flow volume demand for MCWD (afy)}}$$

SVRP ANNUAL DEBT SERVICE - SCHEDULE A

A	B	C	D	E	E	E	G	H	I	J	K	L	M	N	O	P	Q	R	S
	Fiscal Year Ending	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total	(\$ Thousands)
1																			
2																			
3																			
4																			
5																			
6	US Bureau of Reclamation Loan - SVRP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Principal Payment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Interest Payment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Interest Payment - 2%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	RDC Payment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Emergency Reserve Fund Contributions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Total US Bureau of Reclamation Debt Service SVRP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Line 6 + Line 7 + Line 8 + Line 9 + Line 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	State Revolving Fund Loan - SVRP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	Principal Payment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	Interest Payment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	Emergency Reserve Fund Contributions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	Total State Revolving Fund Debt Service SVRP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	Line 14 + Line 15 + Line 16 + Line 17 + Line 18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	Bonds - Variable/Fixed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	Principal Payment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	Interest Payment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	Total Bond Debt Service	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	Total Bond Debt Service for SVRP (1/2 of Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	Line 19 + Line 23 + Line 24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26																			
27	TOTAL ANNUAL DEBT SERVICE FOR SVRP -	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	INCLUDED \$4,000,000 FOR PIPELINE																		
29	Line 10 + Line 25																		
30																			
31																			
32																			
33																			
34	Annual Demand Projections																		
35	Projected CSIP Demand (a)	0	0	15000.0	16,000	17,000	18,000	19,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
36	Projected MCWD M&I Demand (b)	0	0	70	100	150	500	1,500	1,800	2,000	2,000	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200
37	Total CSIP + MCWD Projected Demand	0	0	15,070	16,100	17,150	18,500	20,500	21,800	22,000	22,000	22,200	22,200	22,200	22,200	22,200	22,200	22,200	22,200
38	AAPM & I	0.0000	0.0046	0.0062	0.0062	0.0067	0.0070	0.0074	0.0076	0.0076	0.0076	0.0076	0.0076	0.0076	0.0076	0.0076	0.0076	0.0076	0.0076
39																			
40	Elements of Incremental M&I Costs - See Exhibit E																		
41	O&M Element for M&I - See Exhibit E Item 1																		
42	Projected O&M Cost -																		
43	PCA LETTER OF 10/24/95	0	0	1,657	1,717	1,769	1,822	1,876	1,933	1,990	2,050	2,112	2,175	2,240	2,308	2,377	2,448	2,448	2,448
44	\$1,526,000, 1994 @ 3%/YR																		
45	O&M Element in Share II	0	0	111	107	103	98	91	89	90	92	95	98	101	104	107	110	110	110
46	Projected O&M Cost in Share II / Total CSIP + MCWD																		
47	Bureau Loan Element - See Exhibit E Item 2																		
48	(BRIE) in Share II																		
49	(Line 12 + Line 38) / Line 36																		
50																			
51	Increase in Capital Costs for M&I Element																		
52	No increase in Capital																		
53	Capital Risk Share Element (CRSE) - See Exhibit E Item 4																		
54	Line 29 + Line 38 / Line 36 in Share II																		
55																			
56	Total Incremental Cost																		
57	Line 40 + Line 51 + Line 54 + Line 57																		
58																			
59	Amortization of \$4,000,000 @ flow there																		
60																			
61																			
62																			
63																			
64																			
65																			
66																			
67																			



DATE: 2/27/96 DRAWN BY: LJK/JHL

EXHIBIT G

MONTEREY REGIONAL WATER POLLUTION CONTROL AGENCY ADDENDUM TO

ANNEXATION AGREEMENT AND GROUNDWATER MITIGATION FRAMEWORK FOR MARINA AREA LANDS

1. PURPOSE. The Parties to the Agreement and Framework agree with the Monterey Regional Water Pollution Control Agency ("MRWPCA") that it is in the best interests of all of them and the persons they represent if the MRWPCA is also a party to the Agreement and Framework, with certain additional terms specific to the MRWPCA. If this Addendum is approved by the MRWPCA within one year of approval of the Agreement and Framework and this Addendum by the other Parties, this Addendum will become part of the Agreement and Framework, and the MRWPCA will be considered a party to the Agreement and Framework, effective from the date the Agreement and Framework and this Addendum are approved by the Board of Supervisors of the MCWRA.

2. MRWPCA. MRWPCA is a joint powers authority providing sewage treatment service to its member entities in Northern Monterey County, governed by its Board of Directors.

3. MRWPCA SUPPORT FOR ANNEXATION. MRWPCA is supporting the request for annexation contained in paragraph 4.1 of the Agreement and Framework to encourage reasonable and beneficial water reuse, and to help implement the MCWRA/MRWPCA Agreement, the MRWPCA Annexation Agreement, and the SVRP.

4. RESERVATION FOR MRWPCA. Armstrong shall reserve, for use by MRWPCA, the area shown diagrammatically on Exhibit "I" to this Addendum (hereinafter the "MRWPCA Reserved Area"), subject to the non-exclusive easements shown on Exhibit "I" to be reserved in favor of Armstrong and MCWD, which said reserved easements in favor of Armstrong and MCWD shall be for roads, utilities (including communications), pipelines, and any other purpose for which a road may be used, shall be freely assignable and usable by others, and not subject to surcharge.

4.1. Survey. The MRWPCA Reserved Area, which shall not exceed 10 acres, will be "field" surveyed at the expense of MRWPCA within one year following approval by the MCWRA Board of Supervisors of the annexation to the Zones of any of the lands described in Exhibit "C" to the Agreement and Framework.

4.2. Use. MRWPCA will diligently undertake, and MCWD, City, MCWRA and Armstrong will cooperate in the planning and conduct of, the appropriate environmental review and application for appropriate permits to use the MRWPCA Reserved Area solely and

exclusively as a buffer zone between the existing Regional Treatment Plant and the Armstrong Ranch. Any additional use is subject to the written approval of Armstrong first had and obtained, and any conveyance from Armstrong to MRWPCA shall contain appropriate restrictions on such additional use in the form of a condition subsequent and a power of termination in favor of Armstrong. Any attempt to condemn the power of termination shall be subject to the provisions of paragraph 6.10.3 as if it were a condemnation of fee title.

4.3. Expiration of Reservation. Armstrong's obligation to reserve the MRWPCA Reserved Area shall expire at midnight on June 30, 2003, or upon delivery to Armstrong of written notice from MRWPCA cancelling MRWPCA's right to receive conveyance of the MRWPCA Reserved Area.

4.4. Payment. Upon conveyance of the MRWPCA Reserved Area to MRWPCA, MRWPCA shall pay to Armstrong a sum calculated by multiplying the number of acres in such conveyance by Twenty-Five Thousand Dollars (\$25,000.00).

4.5. Title. Upon receipt by Armstrong of written request from MCWD, Armstrong will forthwith convey all or part of the MRWPCA Reserved Area to MRWPCA by grant deed, free of any financial encumbrances except taxes and assessments not delinquent, but subject to all other encumbrances, and further subject to all laws, ordinances, regulations and rights of all governmental bodies having jurisdiction in, on or over the subject real property as they may from time to time exist.

5. ATTACHMENT TO AGREEMENT AND FRAMEWORK; INCORPORATION BY REFERENCE. When this Addendum is fully executed, it shall be attached to the Agreement and Framework as an integral part of the Agreement and Framework, and the provisions of Sections 1, 2, 3, 8, and 9 through 20, inclusive, and paragraphs 4.5, 5.6, 5.7 and 6.10.3 of the Agreement and Framework are specifically incorporated into this Addendum by this reference and shall apply to the terms of this Addendum and as fully to MRWPCA as though MRWPCA had signed the Agreement and Framework. A person duly authorized by MRWPCA places his or her initials here to indicate MRWPCA's specific agreement to the provisions of paragraph 6.10.3:

Signature: _____

Printed Name and Title: _____

STATE OF CALIFORNIA)
COUNTY OF MONTEREY) ss.

On this 26th day of March, 1996, before me, Ernest K. Morishita, Clerk of the Board of Supervisors, in and for said County and State, personally appeared Edith Johnsen, known to me to be the Chairperson of said Board of Supervisors of the County of Monterey, and known to me to be the person who executed the within instrument on behalf of said political subdivision, and acknowledged to me that such County of Monterey executed the same.

ERNEST K. MORISHITA, Clerk of the
Board of Supervisors of Monterey
County, State of California

By: Camela Oliver

Deputy Clerk

6. NOTICES. Notices to MRWPCA under this Addendum and the Agreement and Framework shall be addressed as follows:

General Manager
5 Harris Court, Building D
Monterey, CA 93940
Phone No.: (408) 372-3367
Fax No.: (408) 372-6178

The address or fax number to which any notice or other writing may be given or made or sent may be changed upon written notice given as provided in paragraph 12 of the Agreement and Framework.

7. ADMINISTRATOR. MRWPCA hereby designates MRWPCA's General Manager as its Administrator for this Agreement and Framework.

IN WITNESS WHEREOF, the Parties execute this Addendum as follows:

Dated: _____, 1996 MRWPCA

By _____
Keith Israel, Agency Director

Dated: March 26, 1996 MONTEREY COUNTY WATER RESOURCES
AGENCY

By Edith Johnsen
Edith Johnsen
Chair, Board of Supervisors

Dated: _____, 1996 MARINA COAST WATER DISTRICT

By _____
Thomas P. Moore
President, Board of Directors

By _____
Malcolm D. Crawford
Secretary, Board of Directors

Dated: _____, 1996

JAY MAX ARMSTRONG

6. NOTICES. Notices to MRWPCA under this Addendum and the Agreement and Framework shall be addressed as follows:

General Manager
5 Harris Court, Building D
Monterey, CA 93940
Phone No.: (408) 372-3367
Fax No.: (408) 372-6178

The address or fax number to which any notice or other writing may be given or made or sent may be changed upon written notice given as provided in paragraph 12 of the Agreement and Framework.

7. ADMINISTRATOR. MRWPCA hereby designates MRWPCA's General Manager as its Administrator for this Agreement and Framework.

IN WITNESS WHEREOF, the Parties execute this Addendum as follows:

Dated: _____, 1996 MRWPCA

By _____
Keith Israel, Agency Director

Dated: _____, 1996 MONTEREY COUNTY WATER RESOURCES
AGENCY

By _____
Edith Johnsen
Chair, Board of Supervisors

Dated: _____, 1996 MARINA COAST WATER DISTRICT

By Thomas P. Moore
Thomas P. Moore
President, Board of Directors

By Malcolm D. Crawford
Malcolm D. Crawford
Secretary, Board of Directors

Dated: _____, 1996

JAY MAX ARMSTRONG

6. NOTICES. Notices to MRWPCA under this Addendum and the Agreement and Framework shall be addressed as follows:

General Manager
5 Harris Court, Building D
Monterey, CA 93940
Phone No.: (408) 372-3367
Fax No.: (408) 372-6178

The address or fax number to which any notice or other writing may be given or made or sent may be changed upon written notice given as provided in paragraph 12 of the Agreement and Framework.

7. ADMINISTRATOR. MRWPCA hereby designates MRWPCA's General Manager as its Administrator for this Agreement and Framework.

IN WITNESS WHEREOF, the Parties execute this Addendum as follows:

Dated: _____, 1996 MRWPCA

By _____
Keith Israel, Agency Director

Dated: _____, 1996 MONTEREY COUNTY WATER RESOURCES
AGENCY

By _____
Edith Johnsen
Chair, Board of Supervisors

Dated: _____, 1996 MARINA COAST WATER DISTRICT

By _____
Thomas P. Moore
President, Board of Directors

By _____
Malcolm D. Crawford
Secretary, Board of Directors

Dated: Apr 18, 1996

Jay M. Armstrong
JAY MAX ARMSTRONG

Dated: _____, 1996

THE SANDRA ARMSTRONG MURRAY
REVOCABLE TRUST UTA dated March 7,
1989

By

 4/4/96
DARRELL L. MURRAY, Trustee

Dated: _____, 1996

THE LOIS AND CLYDE JOHNSON, JR.,
1989 IRREVOCABLE TRUST

By

CLYDE W. JOHNSON III, Trustee

Dated: _____, 1996

THE JOHNSON FAMILY REVOCABLE LIVING
TRUST UTA dated November 29, 1989

By

CLYDE W. JOHNSON III, Trustee

Dated: _____, 1996

CLYDE W. JOHNSON III

Dated: _____, 1996

EDWIN A. JOHNSON

Dated: Mar 29, 1996


JOHN A. ARMSTRONG II

Dated: _____, 1996

SUSANNE IRVINE ARMSTRONG

Dated: Mar. 29, 1996


JAMES IRVINE ARMSTRONG, JR.

Dated: _____, 1996

THE SANDRA ARMSTRONG MURRAY
REVOCABLE TRUST UTA dated March 7,
1989

By DARRELL L. MURRAY, Trustee

Dated: 4-4, 1996

THE LOIS AND CLYDE JOHNSON, JR.,
1989 IRREVOCABLE TRUST
By Clyde W. Johnson III Trustee
CLYDE W. JOHNSON III, Trustee

Dated: 4-4, 1996

THE JOHNSON FAMILY REVOCABLE LIVING
TRUST UTA dated November 29, 1989
By Clyde W. Johnson III Trustee
CLYDE W. JOHNSON III, Trustee

Dated: 4-4, 1996

Clyde W. Johnson III
CLYDE W. JOHNSON III

Dated: 4-4, 1996

Edwin A. Johnson
EDWIN A. JOHNSON

Dated: Mar 29, 1996

John A. Armstrong II
JOHN A. ARMSTRONG II

Dated: _____, 1996

SUSANNE IRVINE ARMSTRONG

Dated: Mar. 29, 1996

James Irvine Armstrong, Jr.
JAMES IRVINE ARMSTRONG, JR.

Dated: _____, 1996

THE SANDRA ARMSTRONG MURRAY
REVOCABLE TRUST UTA dated March 7,
1989

By _____
DARRELL L. MURRAY, Trustee

Dated: _____, 1996

THE LOIS AND CLYDE JOHNSON, JR.,
1989 IRREVOCABLE TRUST

By _____
CLYDE W. JOHNSON III, Trustee

Dated: _____, 1996

THE JOHNSON FAMILY REVOCABLE LIVING
TRUST UTA dated November 29, 1989

By _____
CLYDE W. JOHNSON III, Trustee

Dated: _____, 1996

CLYDE W. JOHNSON III

Dated: _____, 1996

EDWIN A. JOHNSON

Dated: Mar 29, 1996

John A. Armstrong II
JOHN A. ARMSTRONG II

Dated: Apr. 4, 1996

Susanne Irvine Armstrong
SUSANNE IRVINE ARMSTRONG

Dated: Mar. 29, 1996

James Irvine Armstrong, Jr.
JAMES IRVINE ARMSTRONG, JR.

SUSANNE IRVINE ARMSTRONG, JAMES IRVINE ARMSTRONG, JR., and JOHN A. ARMSTRONG II, as Trustees of the Trust for the benefit of MARY JANET ARMSTRONG WEBER as set forth in the Order Settling Report of Trustees due to the death of Lois Armstrong, etc., in the Estate of Irvine Armstrong, also known as James Irvine Armstrong, Deceased, recorded January 4, 1988, in Reel 2191, Official Records of Monterey County at page 643 therein (hereinafter referred to as the "Mary Janet Armstrong Weber Trust")

Dated: Apr 4, 1996

By Susanne Irvine Armstrong, Trustee
SUSANNE IRVINE ARMSTRONG, Trustee

Dated: Mar 29, 1996

By John A. Armstrong II, Trustee
JOHN A. ARMSTRONG II, Trustee

Dated: Mar 29, 1996

By James Irvine Armstrong, Jr., Trustee
JAMES IRVINE ARMSTRONG, JR., Trustee

Dated: _____, 1996

THE 1990 ARMSTRONG FAMILY TRUST
established by Declaration dated
July 2, 1990

By _____
Walter J. McCullough

By _____
Elizabeth S. Armstrong

Dated: _____, 1996

RMC LONESTAR, a California general
partnership

By _____

Dated: _____, 1996

CITY OF MARINA

By _____
James L. Vocolka, Mayor

SUSANNE IRVINE ARMSTRONG, JAMES IRVINE ARMSTRONG, JR., and JOHN A. ARMSTRONG II, as Trustees of the Trust for the benefit of MARY JANET ARMSTRONG WEBER as set forth in the Order Settling Report of Trustees due to the death of Lois Armstrong, etc., in the Estate of Irvine Armstrong, also known as James Irvine Armstrong, Deceased, recorded January 4, 1988, in Reel 2191, Official Records of Monterey County at page 643 therein (hereinafter referred to as the "Mary Janet Armstrong Weber Trust")

Dated: _____, 1996

By _____
SUSANNE IRVINE ARMSTRONG, Trustee

Dated: Mar 29, 1996

By [Signature] Trustee
JOHN A. ARMSTRONG II, Trustee

Dated: Mar. 29, 1996

By [Signature] Trustee
JAMES IRVINE ARMSTRONG, JR., Trustee

Dated: _____, 1996

THE 1990 ARMSTRONG FAMILY TRUST
established by Declaration dated
July 2, 1990

By _____
Walter J. McCullough

By _____
Elizabeth S. Armstrong

Dated: _____, 1996

RMC LONESTAR, a California general
partnership

By _____

Dated: _____, 1996

CITY OF MARINA

By _____
James L. Vocolka, Mayor

SUSANNE IRVINE ARMSTRONG, JAMES IRVINE ARMSTRONG, JR., and JOHN A. ARMSTRONG II, as Trustees of the Trust for the benefit of MARY JANET ARMSTRONG WEBER as set forth in the Order Settling Report of Trustees due to the death of Lois Armstrong, etc., in the Estate of Irvine Armstrong, also known as James Irvine Armstrong, Deceased, recorded January 4, 1988, in Reel 2191, Official Records of Monterey County at page 643 therein (hereinafter referred to as the "Mary Janet Armstrong Weber Trust")

Dated: _____, 1996

By _____
SUSANNE IRVINE ARMSTRONG, Trustee

Dated: Mar 29, 1996

By [Signature]
JOHN A. ARMSTRONG II, Trustee

Dated: Mar. 29, 1996

By [Signature]
JAMES IRVINE ARMSTRONG, JR., Trustee

Dated: _____, 1996

THE 1990 ARMSTRONG FAMILY TRUST
established by Declaration dated
July 2, 1990

By [Signature]
Walter J. McCullough

By [Signature]
Elizabeth S. Armstrong

Dated: _____, 1996

RMC LONESTAR, a California general
partnership

By _____

Dated: _____, 1996

CITY OF MARINA

By _____
James L. Vocelka, Mayor

Dated: _____, 1996

SUSANNE IRVINE ARMSTRONG, JAMES IRVINE ARMSTRONG, JR., and JOHN A. ARMSTRONG II, as Trustees of the Trust for the benefit of MARY JANET ARMSTRONG WEBER as set forth in the Order Settling Report of Trustees due to the death of Lois Armstrong, etc., in the Estate of Irvine Armstrong, also known as James Irvine Armstrong, Deceased, recorded January 4, 1988, in Reel 2191, Official Records of Monterey County at page 643 therein (hereinafter referred to as the "Mary Janet Armstrong Weber Trust")

By _____,
_____, Trustee

Dated: _____, 1996

JAMES IRVINE ARMSTRONG, JR.

Dated: _____, 1996

THE 1990 ARMSTRONG FAMILY TRUST established by Declaration dated July 2, 1990

By _____
Walter J. McCullough

By _____
Elizabeth S. Armstrong

Dated: MAR 26, 1996

RMC LONESTAR, a California general partnership

By Ronald Z. Blick

Dated: _____, 1996

CITY OF MARINA

By _____
James L. Vocolka, Mayor

Dated: _____, 1996

SUSANNE IRVINE ARMSTRONG, JAMES IRVINE ARMSTRONG, JR., and JOHN A. ARMSTRONG II, as Trustees of the Trust for the benefit of MARY JANET ARMSTRONG WEBER as set forth in the Order Settling Report of Trustees due to the death of Lois Armstrong, etc., in the Estate of Irvine Armstrong, also known as James Irvine Armstrong, Deceased, recorded January 4, 1988, in Reel 2191, Official Records of Monterey County at page 643 therein (hereinafter referred to as the "Mary Janet Armstrong Weber Trust")

By _____
_____, Trustee

Dated: _____, 1996

JAMES IRVINE ARMSTRONG, JR.

Dated: _____, 1996

THE 1990 ARMSTRONG FAMILY TRUST established by Declaration dated July 2, 1990

By _____
Walter J. McCullough

By _____
Elizabeth S. Armstrong

Dated: _____, 1996

RMC LONESTAR, a California general partnership

Dated: 4/8/96, 1996

By _____
CITY OF MARINA

By _____
James L. Vocelka, Mayor

APPROVED AS TO FORM:

Dated: 8/5, 1996

William K. Rentz
WILLIAM K. RENTZ
Deputy County Counsel, Monterey
County

Dated: _____, 1996

NOLAND, HAMERLY, ETIENNE & HOSS
A Professional Corporation

By _____
Lloyd W. Lowrey, Jr.
Legal Counsel for MARINA COAST
WATER DISTRICT

Dated: _____, 1996

ROBERT R. WELLINGTON
Legal Counsel for CITY OF MARINA

Dated: _____, 1996

ROBERT R. WELLINGTON
Legal Counsel for MRWPCA

Dated: _____, 1996

THOMPSON, HUBBARD AND OMETER
A Law Corporation

By _____
Donald G. Hubbard
Legal Counsel for J.G. ARMSTRONG
FAMILY MEMBERS

Dated: _____, 1996

PILLSBURY, MADISON AND SUTRO

By _____
Thomas P. O'Donnell
Legal Counsel for RMC LONESTAR

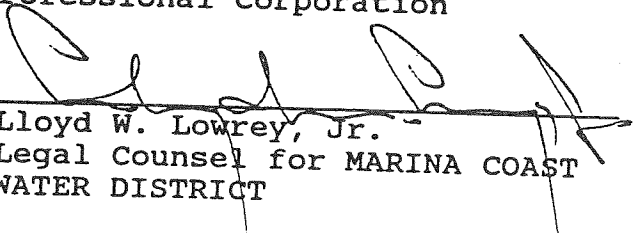
APPROVED AS TO FORM:

Dated: _____, 1996

WILLIAM K. RENTZ
Deputy County Counsel, Monterey
County

Dated: March 26, 1996

NOLAND, HAMERLY, ETIENNE & HOSS
A Professional Corporation

By 
Lloyd W. Lowrey, Jr.
Legal Counsel for MARINA COAST
WATER DISTRICT

Dated: _____, 1996

ROBERT R. WELLINGTON
Legal Counsel for CITY OF MARINA

Dated: _____, 1996

ROBERT R. WELLINGTON
Legal Counsel for MRWPCA

Dated: _____, 1996

THOMPSON, HUBBARD AND OMETER
A Law Corporation

By _____
Donald G. Hubbard
Legal Counsel for J.G. ARMSTRONG
FAMILY MEMBERS

Dated: _____, 1996

PILLSBURY, MADISON AND SUTRO

By _____
Thomas P. O'Donnell
Legal Counsel for RMC LONESTAR

APPROVED AS TO FORM:

Dated: _____, 1996

WILLIAM K. RENTZ
Deputy County Counsel, Monterey
County

Dated: _____, 1996

NOLAND, HAMERLY, ETIENNE & HOSS
A Professional Corporation

By _____
Lloyd W. Lowrey, Jr.
Legal Counsel for MARINA COAST
WATER DISTRICT

Dated: July 29, 1996

Robert R. Wellington
ROBERT R. WELLINGTON
Legal Counsel for CITY OF MARINA

Dated: July 29, 1996

Robert R. Wellington
ROBERT R. WELLINGTON
Legal Counsel for MRWPCA

Dated: _____, 1996

THOMPSON, HUBBARD AND OMETER
A Law Corporation

By _____
Donald G. Hubbard
Legal Counsel for J.G. ARMSTRONG
FAMILY MEMBERS

Dated: _____, 1996

PILLSBURY, MADISON AND SUTRO

By _____
Thomas P. O'Donnell
Legal Counsel for RMC LONESTAR

APPROVED AS TO FORM:

Dated: _____, 1996

WILLIAM K. RENTZ
Deputy County Counsel, Monterey
County

Dated: _____, 1996

NOLAND, HAMERLY, ETIENNE & HOSS
A Professional Corporation

By _____
Lloyd W. Lowrey, Jr.
Legal Counsel for MARINA COAST
WATER DISTRICT

Dated: _____, 1996

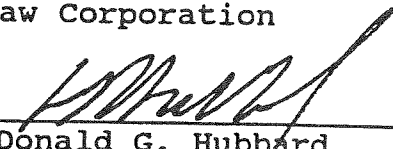
ROBERT R. WELLINGTON
Legal Counsel for CITY OF MARINA

Dated: _____, 1996

ROBERT R. WELLINGTON
Legal Counsel for MRWPCA

Dated: MARCH 29, 1996

THOMPSON, HUBBARD AND OMETER
A Law Corporation

By 
Donald G. Hubbard
Legal Counsel for J.G. ARMSTRONG
FAMILY MEMBERS

Dated: _____, 1996

PILLSBURY, MADISON AND SUTRO

By _____
Thomas P. O'Donnell
Legal Counsel for RMC LONESTAR

APPROVED AS TO FORM:

Dated: _____, 1996

WILLIAM K. RENTZ
Deputy County Counsel, Monterey
County

Dated: _____, 1996

NOLAND, HAMERLY, ETIENNE & HOSS
A Professional Corporation

By _____
Lloyd W. Lowrey, Jr.
Legal Counsel for MARINA COAST
WATER DISTRICT

Dated: _____, 1996

ROBERT R. WELLINGTON
Legal Counsel for CITY OF MARINA

Dated: _____, 1996

ROBERT R. WELLINGTON
Legal Counsel for MRWPCA


Dated: _____, 1996

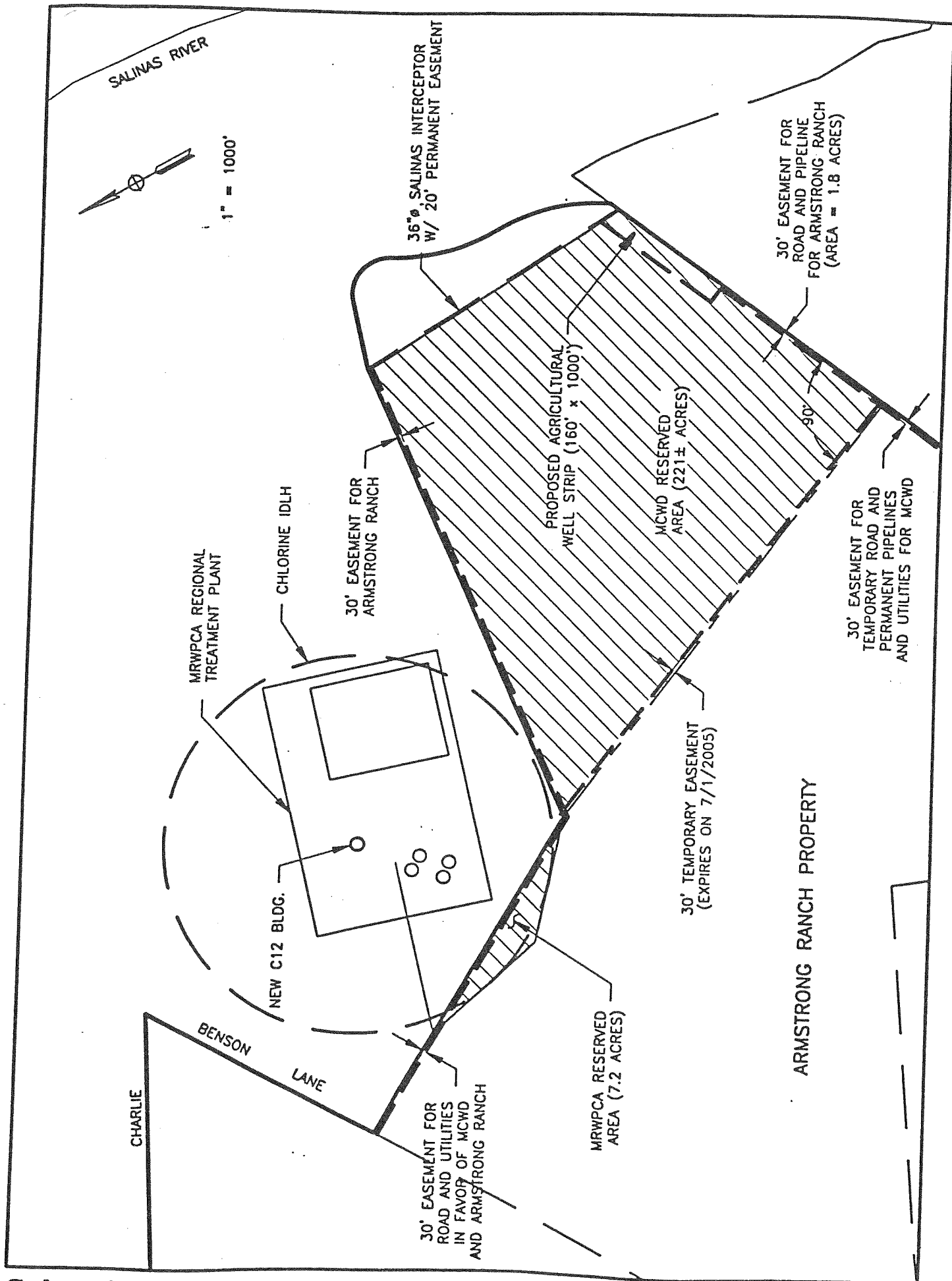
THOMPSON, HUBBARD AND OMETER
A Law Corporation

By _____
Donald G. Hubbard
Legal Counsel for J.G. ARMSTRONG
FAMILY MEMBERS

Dated: March 26, 1996

The Genesis Law Group
PILLSBURY, MADISON AND SUTRO

By 
Thomas P. O'Donnell
Legal Counsel for RMC LONESTAR



CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

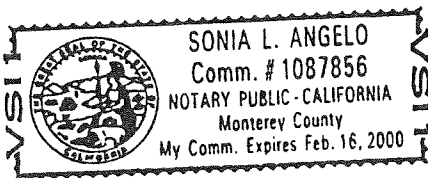
State of CALIFORNIA

County of MONTEREY

On 04-12-96 before me, *SONIA L. ANGELO, NOTARY PUBLIC* *
Date Name and Title of Officer (e.g., "Jane Doe, Notary Public")

personally appeared * * * * * THOMAS P. MOORE * * * * *
Name(s) of Signer(s)

☐ personally known to me – **OR** – ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



WITNESS my hand and official seal.

[Signature]
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: ANNEXATION AGREEMENT AND GROUNDWATER MITIGATION FRAMEWORK FOR MARINA AREA LANDS

Document Date: APRIL 12, 1996 Number of Pages: 27 w/ EXH A-F

Signer(s) Other Than Named Above: NONE

Capacity(ies) Claimed by Signer(s)

Signer's Name: THOMAS P MOORE

- ☐ Individual
☒ Corporate Officer
Title(s): PRESIDENT, BOARD OF DIRECTORS
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing:

MARINA WATER COAST DISTRICT

RIGHT THUMBPRINT
OF SIGNER
Top of thumb here

Signer's Name: _____

- ☐ Individual
☐ Corporate Officer
Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing:

RIGHT THUMBPRINT
OF SIGNER
Top of thumb here

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

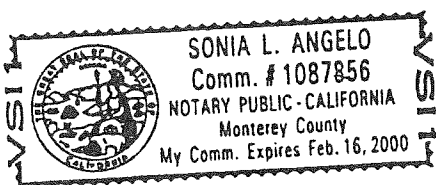
State of CALIFORNIA

County of MONTEREY

On APRIL 17, 1996 before me, * *SONIA L. ANGELO, NOTARY PUBLIC* *
Date Name and Title of Officer (e.g., "Jane Doe, Notary Public")

personally appeared * *MALCOLM D. CRAWFORD* * * * *
Name(s) of Signer(s)

☐ personally known to me – OR – ☒ proved to me on the basis of satisfactory evidence to be the person(~~s~~) whose name(~~s~~) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she~~/~~they~~ executed the same in his/~~her~~/~~their~~ authorized capacity(~~ies~~), and that by his/~~her~~/~~their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.



WITNESS my hand and official seal.

Sonia L. Angelo
(Signature of Notary Public)

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: ANNEXATION AGREEMENT AND GROUNDWATER MITIGATION FRAMEWORK FOR MARINA AREA LANDS

Document Date: APRIL 17, 1996 Number of Pages: 27 w/EXH A-F

Signer(s) Other Than Named Above: NONE

Capacity(ies) Claimed by Signer(s)

Signer's Name: MALCOLM D. CRAWFORD

- ☐ Individual
☒ Corporate Officer
Title(s): SECRETARY, BOARD OF DIRECTORS
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

RIGHT THUMBPRINT
OF SIGNER
Top of thumb here

Signer Is Representing:

MARINA WATER COAST DISTRICT

Signer's Name: _____

- ☐ Individual
☐ Corporate Officer
Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

RIGHT THUMBPRINT
OF SIGNER
Top of thumb here

Signer Is Representing:

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

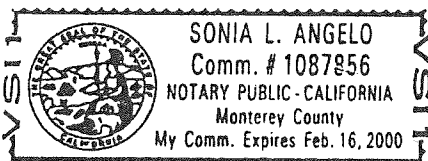
State of CALIFORNIA

County of MONTEREY

On APRIL 12, 1996 before me, * * SONIA L. ANGELO, NOTARY PUBLIC * * *
Date Name and Title of Officer (e.g., "Jane Doe, Notary Public")

personally appeared * * THOMAS P. MOORE * * * * *
Name(s) of Signer(s)

☐ personally known to me – OR – ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/~~she~~/they executed the same in his/~~her~~/their authorized capacity(ies), and that by his/~~her~~/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



WITNESS my hand and official seal.

[Signature]
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

EXHIBIT G

Title or Type of Document: MONTEREY REGIONAL WATER POLLUTION CONTROL AGENCY ADDENDUM TO ANNEXATIO AGREEMENT AND GROUNDWATER MITIGATION FRAMEWORK FOR MARINA AREAL LANDS
Document Date: APRIL 12, 1996 Number of Pages: SIX

Signer(s) Other Than Named Above: NONE

Capacity(ies) Claimed by Signer(s)

Signer's Name: THOMAS P. MOORE

- ☐ Individual
☒ Corporate Officer
Title(s): PRESIDENT, BOARD OF DIRECTORS
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing:

MARINA COAST WATER DISTRICT

RIGHT THUMBPRINT
OF SIGNER
Top of thumb here

Signer's Name: _____

- ☐ Individual
☐ Corporate Officer
Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing:

RIGHT THUMBPRINT
OF SIGNER
Top of thumb here

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of CALIFORNIA

County of MONTEREY

On 04-17-96 before me, *SONIA L. ANGELO, NOTARY PUBLIC* * *
Date Name and Title of Officer (e.g., "Jane Doe, Notary Public")

personally appeared * * *MALCOLM D. CRAWFORD* * * * *
Name(s) of Signer(s)

☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



WITNESS my hand and official seal.

Sonia L. Angelo
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

EXHIBIT G

Title or Type of Document: MONTEREY REGIONAL WATER POLLUTION CONTROL AGENCY ADDENDUM TO ANNEXATION AGREEMENT AND GROUNDWATER MITIGATION FRAMEWORK FOR MARINA AREA LANDS

Document Date: APRIL 17, 1996 Number of Pages: 6

Signer(s) Other Than Named Above: NONE

Capacity(ies) Claimed by Signer(s)

Signer's Name: MALCOLM D. CRAWFORD

- ☐ Individual
☒ Corporate Officer
Title(s): SECRETARY, BOARD OF DIRECTORS
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing:

MARINA COAST WATER DISTRICT

RIGHT THUMBPRINT
OF SIGNER
Top of thumb here

Signer's Name: _____

- ☐ Individual
☐ Corporate Officer
Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing:

RIGHT THUMBPRINT
OF SIGNER
Top of thumb here

ACKNOWLEDGMENT

STATE OF New Mexico)
COUNTY OF Bernalillo) : ss.

On April 8, 1996, before me, Lupe Estrada,
a Notary Public, duly commissioned and sworn, personally appeared
JAY MAX ARMSTRONG

☐ personally known to me, or

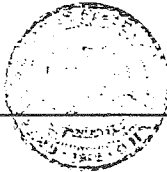
☒ proved to me on the basis of satisfactory evidence

to be the person whose name is subscribed to the within instrument and
acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument, the person, or
the entity upon behalf of which the person acted, executed the same.

WITNESS my hand and official seal.

Lupe Estrada

Signature



OFFICIAL SEAL
LUPE ESTRADA
NOTARY PUBLIC-STATE OF NEW MEXICO

My commission expires:

3-29-98

{Seal}

ACKNOWLEDGMENT

STATE OF WASH)
COUNTY OF KING) : ss.

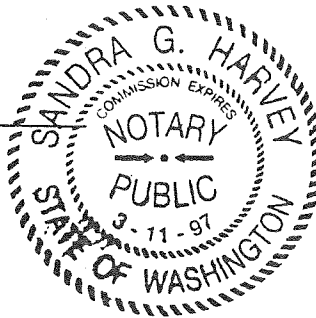
On 4/4, 1996, before me, SANDRA G. HARVEY,
a Notary Public, duly commissioned and sworn, personally appeared
DARRELL L. MURRAY

- ☒ personally known to me, or
☐ proved to me on the basis of satisfactory evidence

to be the person whose name is subscribed to the within instrument and
acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument, the person, or
the entity upon behalf of which the person acted, executed the same.

WITNESS my hand and official seal.

Sandra G. Harvey
Signature



{Seal}

ACKNOWLEDGMENT

STATE OF CALIFORNIA)
 : ss.
COUNTY OF FRESNO)

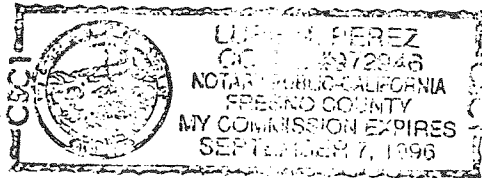
On April 4, 1996, 1996, before me, Lupe M. Perez,
a Notary Public, duly commissioned and sworn, personally appeared
CLYDE W. JOHNSON III

- ☐ personally known to me, or
☒ proved to me on the basis of satisfactory evidence

to be the person whose name is subscribed to the within instrument and
acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument, the person, or
the entity upon behalf of which the person acted, executed the same.

WITNESS my hand and official seal.

Lupe M. Perez
Signature



{Seal}

ACKNOWLEDGMENT

STATE OF CALIFORNIA)
 : ss.
COUNTY OF Fresno)

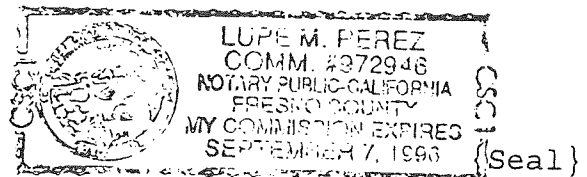
On April 4, 1996, before me, Lupe M. Perez,
a Notary Public, duly commissioned and sworn, personally appeared
EDWIN A. JOHNSON

- ☐ personally known to me, or
☒ proved to me on the basis of satisfactory evidence

to be the person whose name is subscribed to the within instrument and
acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument, the person, or
the entity upon behalf of which the person acted, executed the same.

WITNESS my hand and official seal.

Lupe M. Perez
Signature



ACKNOWLEDGMENT

STATE OF CALIFORNIA)
 : ss.
COUNTY OF MONTEREY)

On March 29, 1996, before me, Jeannine L. Kreider,
a Notary Public, duly commissioned and sworn, personally appeared
JOHN A. ARMSTRONG II

☒ personally known to me, or

☐ proved to me on the basis of satisfactory evidence

to be the person whose name is subscribed to the within instrument and
acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument, the person, or
the entity upon behalf of which the person acted, executed the same.

WITNESS my hand and official seal.

Jeannine L. Kreider
Signature

{Seal}



ACKNOWLEDGMENT


STATE OF CALIFORNIA)
 : ss.
COUNTY OF MONTEREY)

On March 29, 1996, before me, Jeannine L. Kreider,
a Notary Public, duly commissioned and sworn, personally appeared JAMES
IRVINE ARMSTRONG, JR.

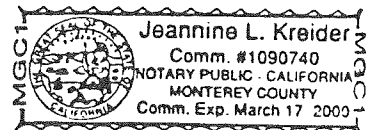
- ☒ personally known to me, or
☐ proved to me on the basis of satisfactory evidence

to be the person whose name is subscribed to the within instrument and
acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument, the person, or
the entity upon behalf of which the person acted, executed the same.

WITNESS my hand and official seal.


Signature

{Seal}



ACKNOWLEDGMENT

STATE OF CALIFORNIA)
 : ss.
COUNTY OF Yolo)

On April 4, 1996, before me, Kara K Walker,
a Notary Public, duly commissioned and sworn, personally appeared
SUSANNE IRVINE ARMSTRONG

☒ personally known to me, or

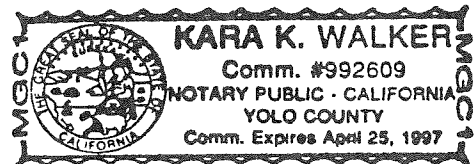
☐ proved to me on the basis of satisfactory evidence

to be the person whose name is subscribed to the within instrument and
acknowledged to me that she executed the same in her authorized
capacity, and that by her signature on the instrument, the person, or
the entity upon behalf of which the person acted, executed the same.

WITNESS my hand and official seal.

Kara K. Walker
Signature

{Seal}



ACKNOWLEDGMENT

STATE OF CALIFORNIA)
 : SS.
COUNTY OF MONTEREY)

On MAY 4, 1996, before me, Paul M. Hamerly,
a Notary Public, duly commissioned and sworn, personally appeared
WALTER J. McCULLOUGH

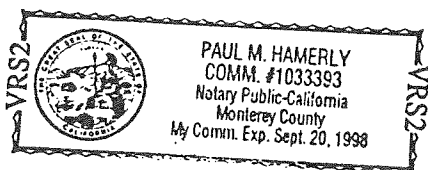
- ☒ personally known to me, or
☐ proved to me on the basis of satisfactory evidence

to be the person whose name is subscribed to the within instrument and
acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument, the person, or
the entity upon behalf of which the person acted, executed the same.

WITNESS my hand and official seal.

Paul M. Hamerly
Signature

{Seal}



ACKNOWLEDGMENT

STATE OF CALIFORNIA)
 : SS.
COUNTY OF MONTEREY)

On MAY 6, 1996, before me, Paul M. Hamerly,
a Notary Public, duly commissioned and sworn, personally appeared
ELIZABETH S. ARMSTRONG

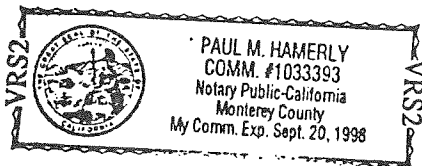
- ☒ personally known to me, or
☐ proved to me on the basis of satisfactory evidence

to be the person whose name is subscribed to the within instrument and
acknowledged to me that she executed the same in her authorized
capacity, and that by her signature on the instrument, the person, or
the entity upon behalf of which the person acted, executed the same.

WITNESS my hand and official seal.

Paul M. Hamerly
Signature

{Seal}

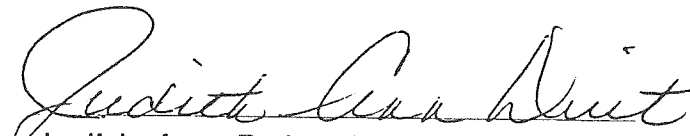


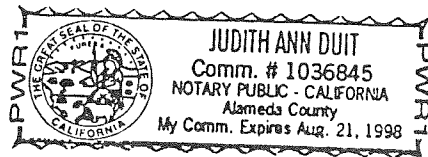
State of California

County of Alameda

On April 1, 1996, before me, Judith Ann Duit/Notary Public, personally appeared Ronald L. Blick, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.


Judith Ann Duit, Notary Public



OPTIONAL INFORMATION

The information below is not required by law. However, it could prevent fraudulent attachment of this acknowledgment to an unauthorized document.

CAPACITY CLAIMED BY SIGNER (PRINCIPAL)

- ☒ INDIVIDUAL
☒ CORPORATE OFFICER

President RMC LONESTAR
TITLE(S)

- ☐ PARTNER(S)
☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER: _____

SIGNER IS REPRESENTING:

Name of person(s) or entity(ies)
RMC LONESTAR

DESCRIPTION OF ATTACHED DOCUMENT

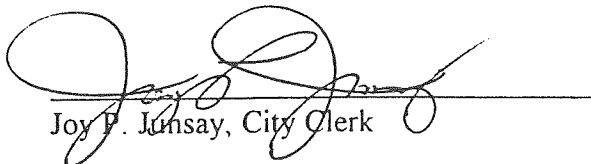
Annexation Agreement and Groundwater
Mitigation Framework for Marina Area Lands
TITLE OR TYPE OF DOCUMENT

27 plus exhibit A - I
NUMBER OF PAGES

3/26/96
DATE OF DOCUMENT

OTHER

**211 HILLCREST AVENUE
MARINA, CA 93933
TELEPHONE (408) 384-3715
FAX (408) 384-0425**



ACKNOWLEDGMENT

STATE OF CALIFORNIA)
 : ss.
COUNTY OF MONTEREY)

On March 29, 1996, before me, Jeannine L. Kreider,
a Notary Public, duly commissioned and sworn, personally appeared
DONALD G. HUBBARD

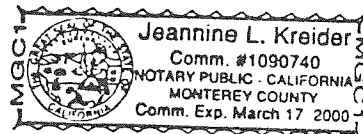
- ☒ personally known to me, or
☐ proved to me on the basis of satisfactory evidence

to be the person whose name is subscribed to the within instrument and
acknowledged to me that he executed the same in his authorized
capacity, and that by his signature on the instrument, the person, or
the entity upon behalf of which the person acted, executed the same.

WITNESS my hand and official seal.

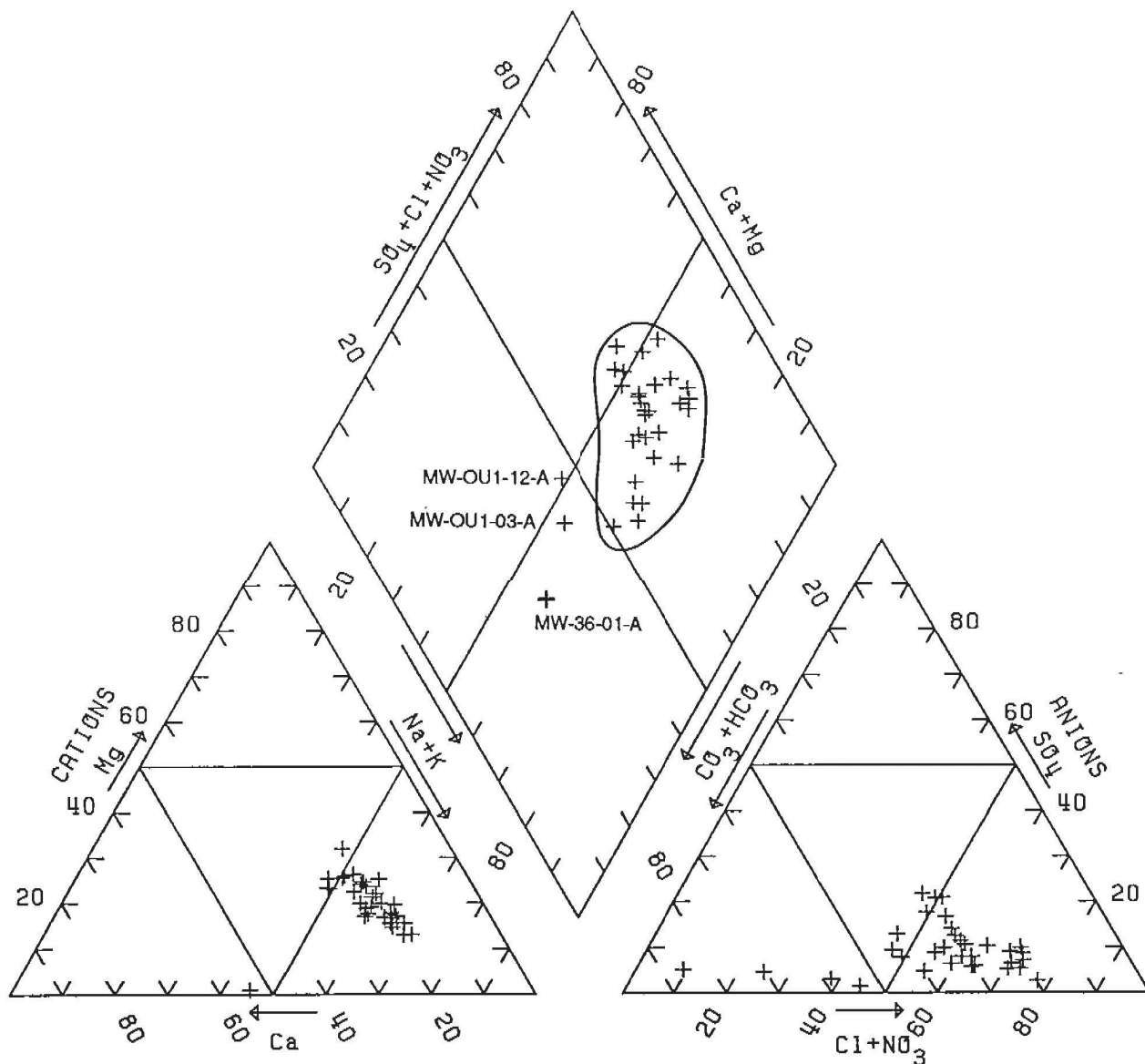
Jeannine L. Kreider
Signature

{Seal}



Appendix 4A

Supplemental Hydrogeologic Conceptual Model Figures



Legend:



A-Aquifer Water Sample

Ford Ord A-Aquifer Water Quality

Source:

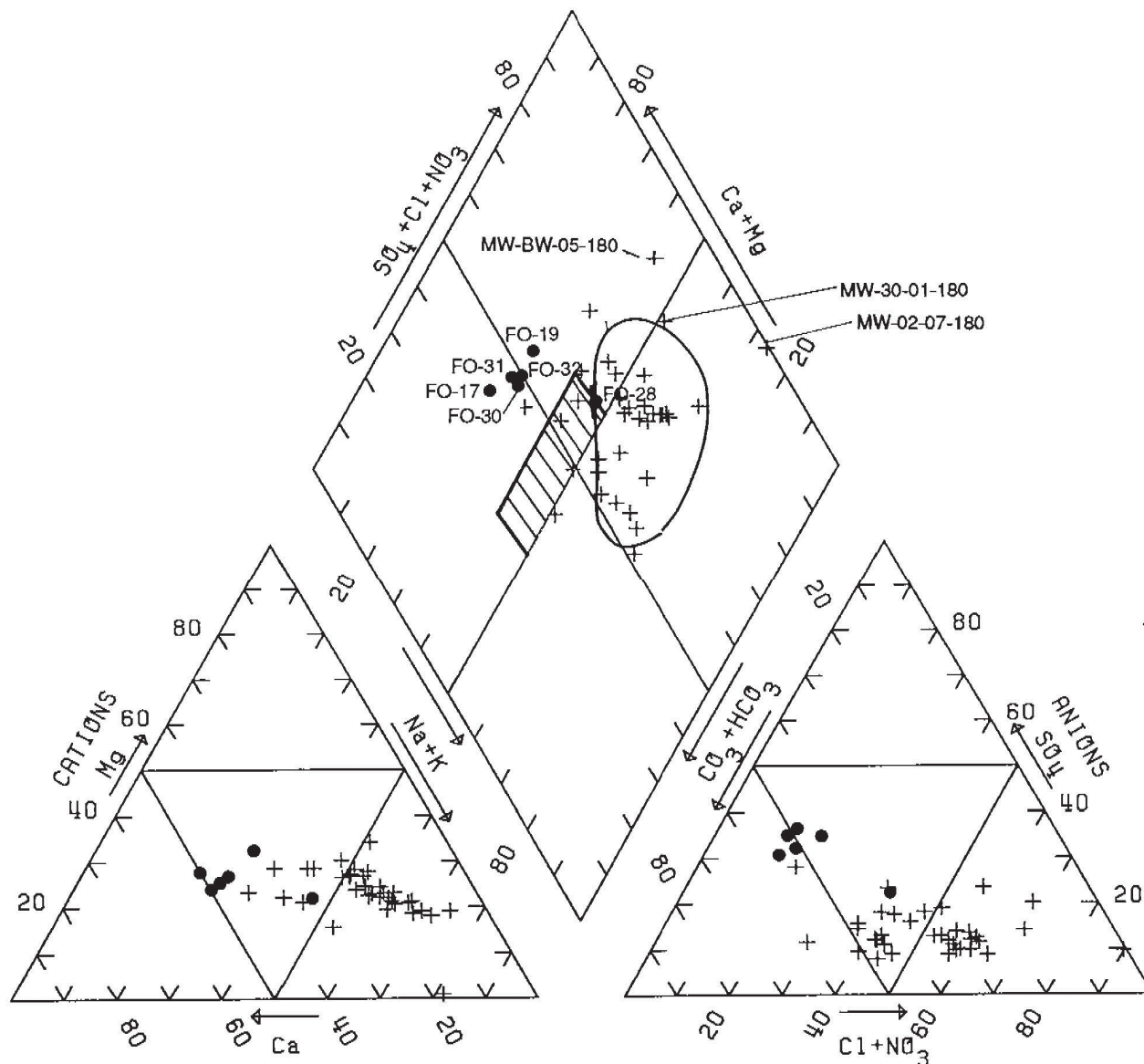
Adapted from HLA (1994).

**Piper Diagram,
Dune Sand Aquifer**

Monterey Subbasin
Groundwater Sustainability Plan

December 2020

Figure A4-1



Legend:

- 180-Foot Aquifer Water Sample (1992 Data)
- Ford Ord Water-Supply Water Sample (1985 Data)
- Ford Ord A-Aquifer Water Quality
- Salinas Valley 180-Foot Aquifer Water Quality (DKT, 1989)

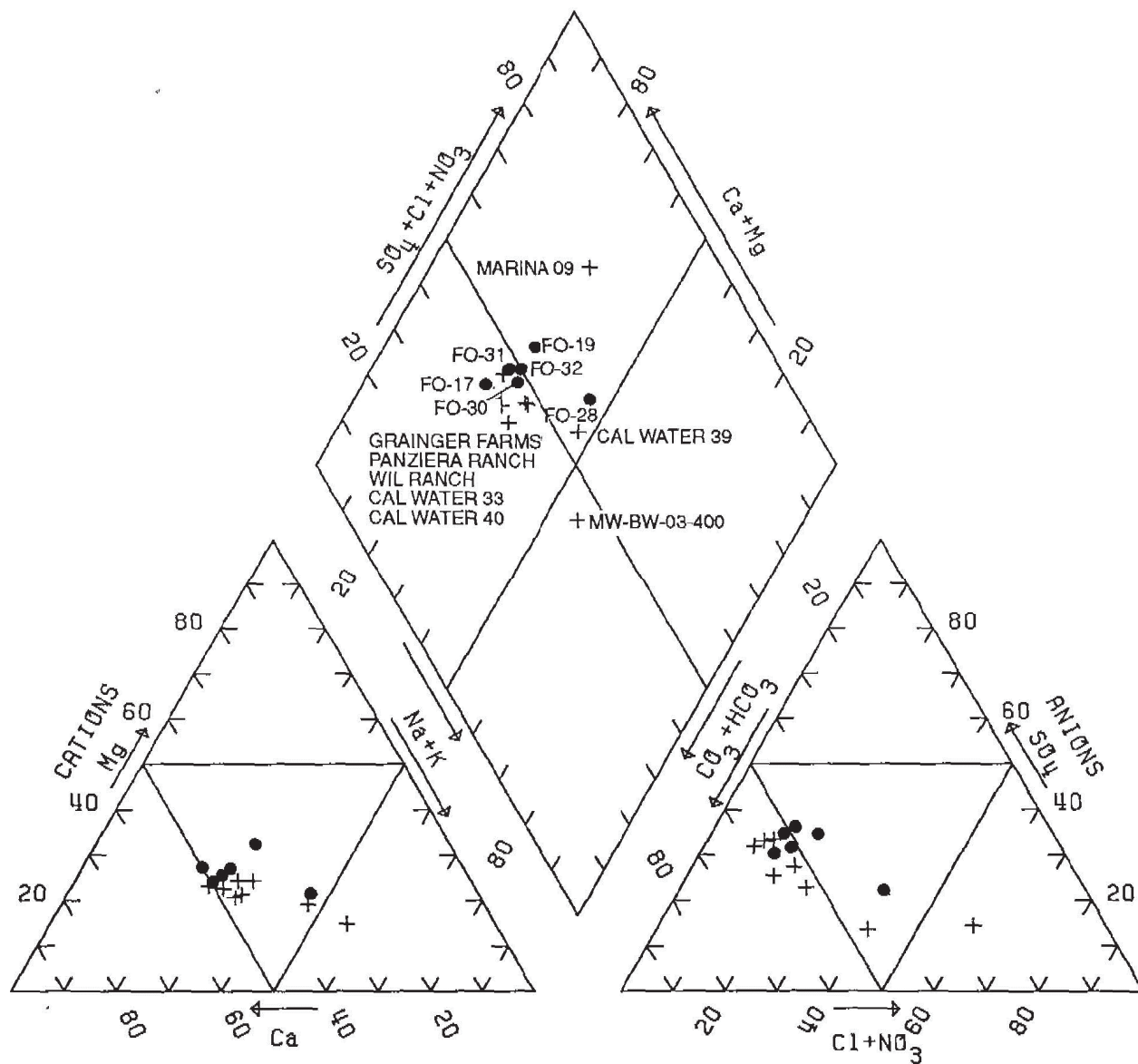
Source:

Adapted from HLA (1994).

**Piper Diagram,
180-Foot Aquifer**

Monterey Subbasin
Groundwater Sustainability Plan
December 2020

Figure A4-2



Legend:

- + 400-Foot Aquifer Water Sample (1992 Data)
- Ford Ord Water-Supply Water Sample (1985 Data)
- D Ford Ord A-Aquifer Water Quality

Source:

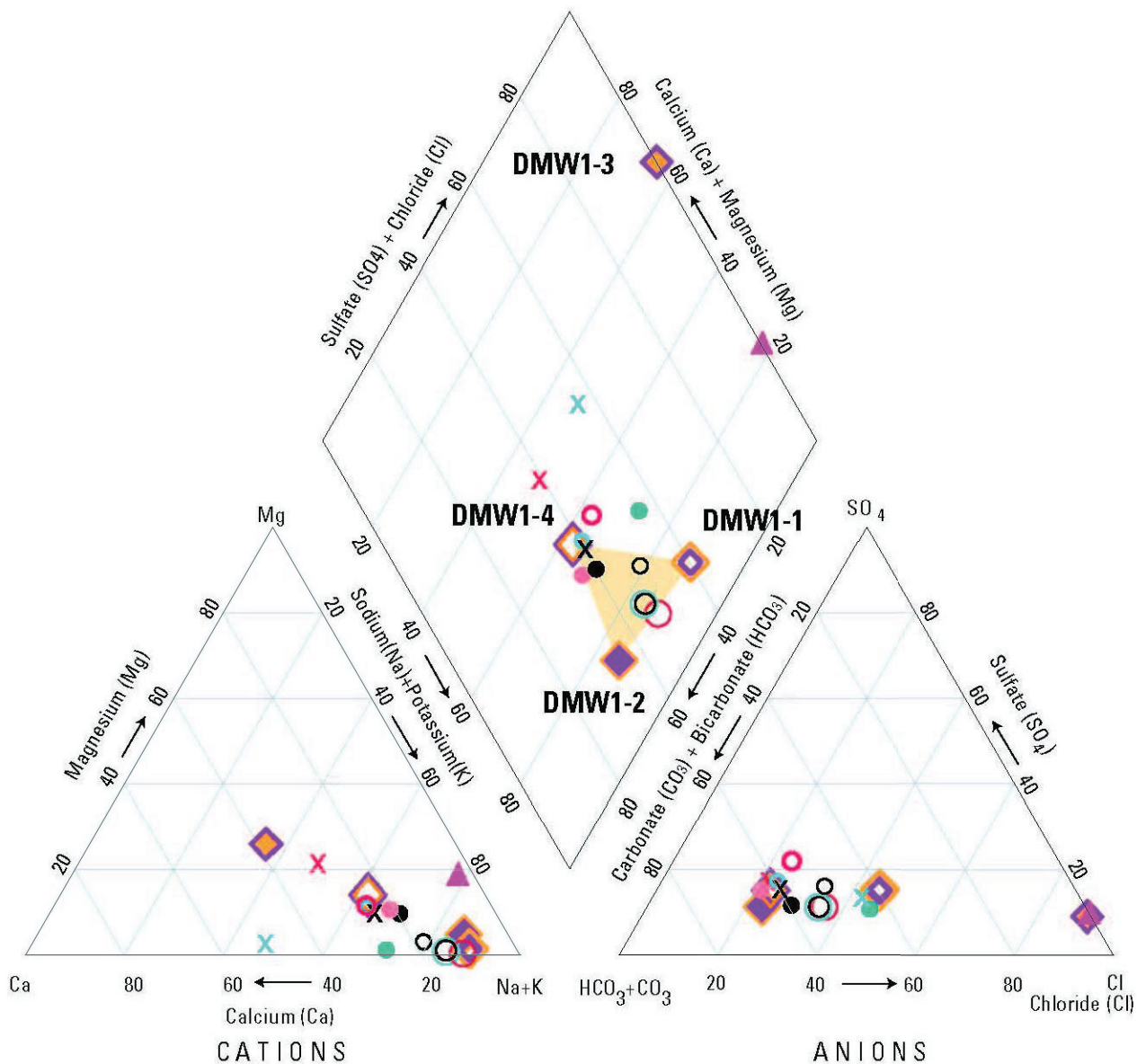
Adapted from HLA (1994).

Piper Diagram, 400-Foot Aquifer

Monterey Subbasin
Groundwater Sustainability Plan

December 2020

Figure A4-3



Legend:

Wells - Deep Aquifer Monitoring 14S/1E

- 24L5 [DMW1-4] (930'-950')
- 24L4 [DMW1-3] (1,040'-1,060')
- 24L3 [DMW1-2] (1,410'-1,430')
- 24L2 [DMW1-1] (1,820'-1,860')
- (') - Indicates depth in feet below land surface
- Seawater

Wells - Water Supply 14S/2E

	1995	1997	2000	MCWD Well Number
31K2M				9
32				10
32D1				11
30				12

Source:

Adapted from USGS (2002).

Notes:

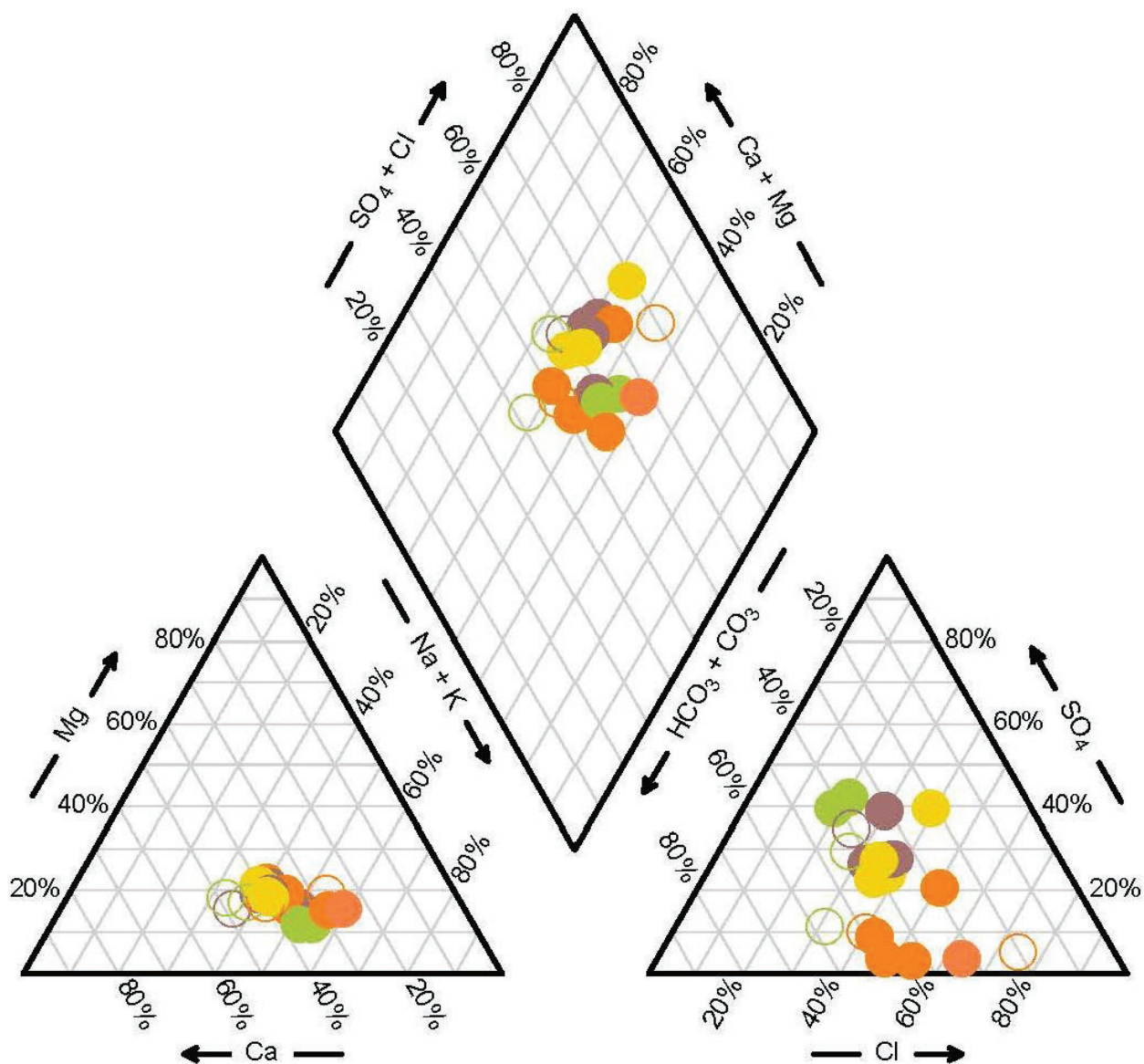
1. Trilinear diagram of major-ion chemistry for selected groundwater samples from the deep-aquifer system in the Salinas Valley, 1995, 1997, and 2000 with samples from DMW1 wells, 2000.

Piper Diagram, Deep Aquifer

Monterey Subbasin
Groundwater Sustainability Plan

December 2020

Figure A4-4



Legend:

- QTc
- QTc + Tsm
- Tsm
- QTc + Tmd
- Tmd
- Tmd + Tus
- Tus

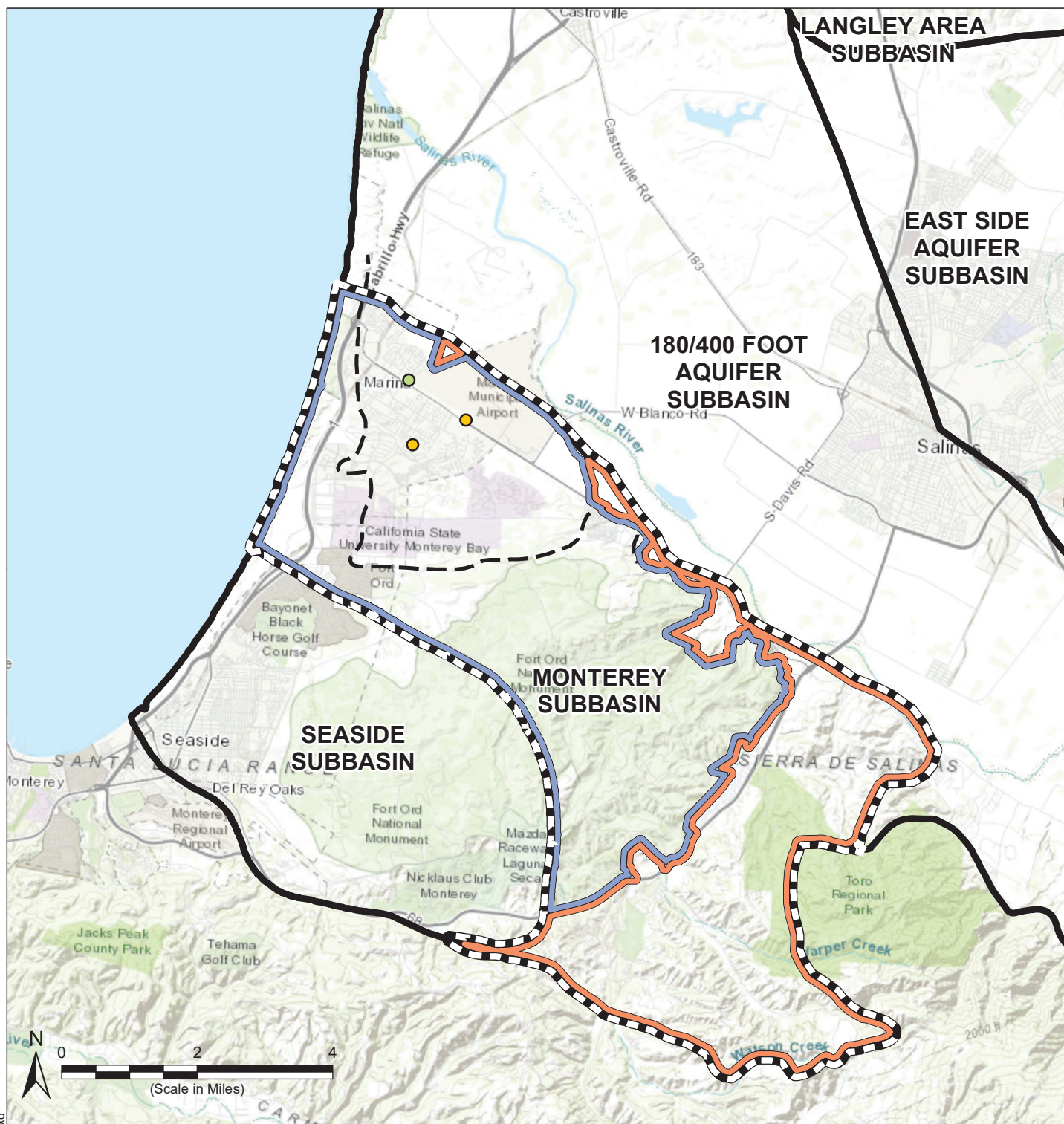
Source:

Adapted from GeoSyntec (2007).

**Piper Diagram,
Corral de Tierra Area**

Monterey Subbasin
Groundwater Sustainability Plan
December 2020

Figure A4-5



Legend



Monterey Subbasin



Other Groundwater Subbasins within Salinas Valley Basin



Extent of FO-SVA (Harding ESE, 2001)

Transmissivity (ft²/d)

- Less than 1,000
- 1,000 - 5,000
- 5,000 - 10,000
- 10,000 - 30,000
- Greater than 30,000

Management Areas

Marina-Ord Area

Corral de Tierra Area

Abbreviations

ft²/d = square feet per day

Notes

1. All locations are approximate.

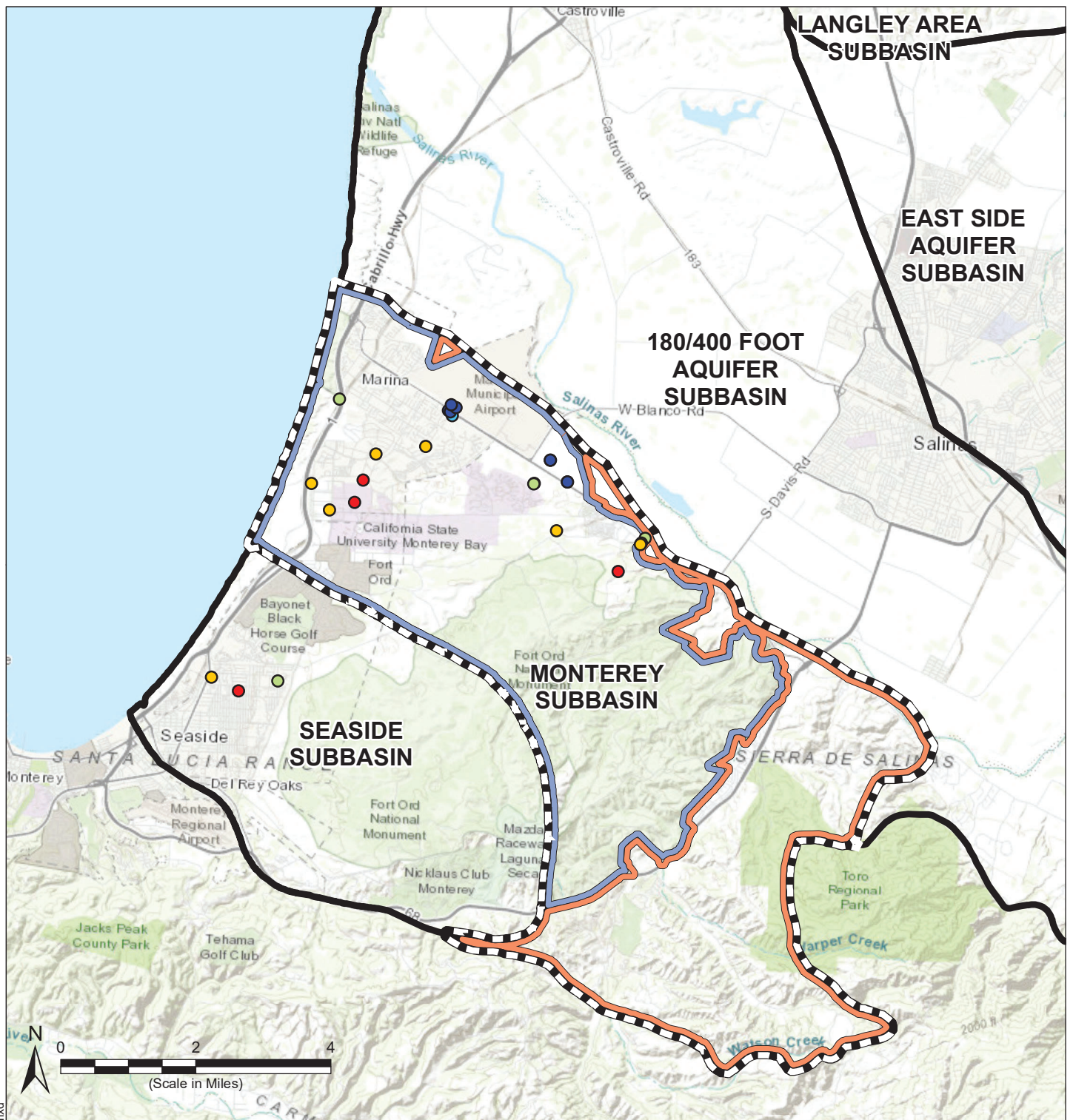
Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 16 December 2020.
2. Transmissivities are obtained from the sources below:
 - HLA, 1994
 - HLA, 1999
 - MACTEC, 2006
 - USACE, 2006
 - USGS, 2002
 - MCWD, 2019



Measured Transmissivities in the Dune Sand Aquifer

Monterey Subbasin
Groundwater Sustainability Plan
December 2020






Figure 4A-6





Legend

-  Monterey Subbasin
-  Other Groundwater Subbasins within Salinas Valley Basin

Transmissivity (ft²/d)

-  Less than 1,000
-  1,000 - 5,000
-  5,000 - 10,000
-  10,000 - 30,000
-  Greater than 30,000

Management Areas

-  Marina-Ord Area
-  Corral de Tierra Area

Abbreviations

ft²/d = square feet per day

Notes

1. All locations are approximate.

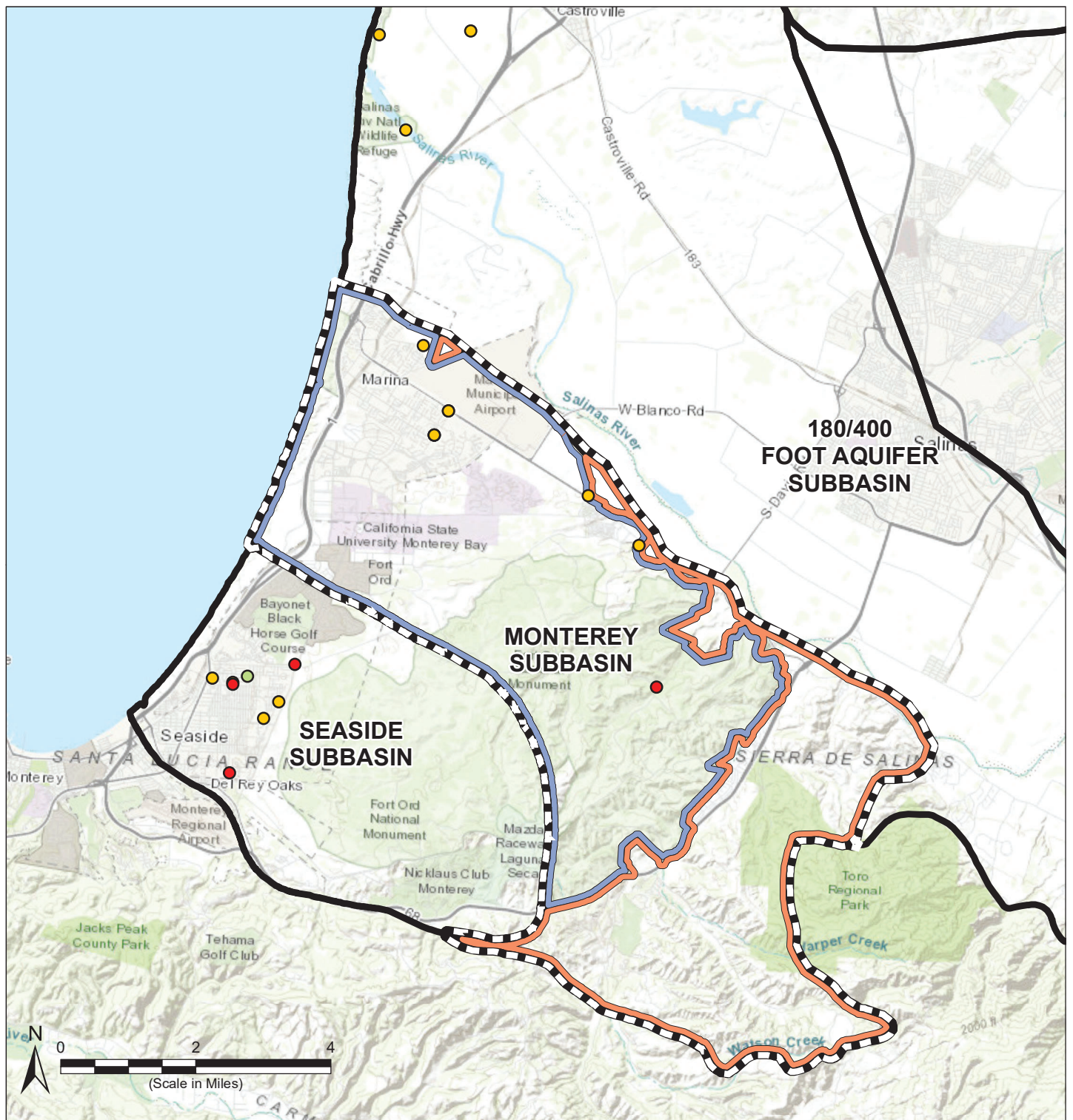
Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 16 December 2020.
2. Transmissivities are obtained from the sources below:
 - HLA, 1994
 - HLA, 1999
 - MACTEC, 2006
 - USACE, 2006
 - USGS, 2002
 - MCWD, 2019

Measured Transmissivities in the 180-Foot Aquifer and 400-Foot Aquifer

Monterey Subbasin
Groundwater Sustainability Plan
December 2020

Figure 4A-7



Legend

- Monterey Subbasin
- Other Groundwater Subbasins within Salinas Valley Basin

Transmissivity (ft²/d)

- Less than 1,000
- 1,000 - 5,000
- 5,000 - 10,000
- 10,000 - 30,000
- Greater than 30,000

Management Areas

- Marina-Ord Area
- Corral de Tierra Area

Abbreviations

ft²/d = square feet per day

Notes

1. All locations are approximate.

Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 16 December 2020.
2. Transmissivities are obtained from the sources below:
 - HLA, 1994
 - HLA, 1999
 - MACTEC, 2006
 - USACE, 2006
 - USGS, 2002
 - MCWD, 2019

Measured Transmissivities in the Deep Aquifer

Monterey Subbasin
Groundwater Sustainability Plan
December 2020

Figure 4A-8

Appendix 5A

**Relationship between Total Dissolved Solids and Chloride in the Lower 180-Foot/400-Foot
Aquifer in the Monterey Subbasin**

Appendix 5-A

Relationship between Total Dissolved Solids and Chloride in the Lower 180-Foot/400-Foot Aquifer within the Monterey Subbasin

GSP Emergency Regulations require that (1) Seawater Intrusion minimum threshold to be established using a chloride concentration isocontour (§354.28 (c)(3)).and that (2) monitoring of Seawater Intrusion to be “using chloride concentrations, or other measurements convertible to chloride concentrations...” (§354.34 (c)(3)) The Monterey Subbasin Groundwater Sustainability Plan (GSP) intends to use total dissolved solids (TDS) concentration data as a proxy for determining seawater intrusion where chloride data is unavailable. Therefore, this memorandum examines historic chloride and TDS data within the seawater intruded lower 180-Foot/400-Foot Aquifer of the Monterey Subbasin and establishes a relationship between elevated TDS and chloride concentrations within this aquifer.

TDS and chloride data from wells that meet the following criteria within the Monterey Subbasin are selected for this analysis:

- Has at least 15 TDS and/or chloride measurements; and
- Is screened in the lower 180-Foot/400-Foot Aquifer.

A total of 71 wells met the criteria above. Within these 71 wells, this analysis compiled TDS and chloride concentrations that were sampled at each well during the same sampling event (i.e. "TDS-CL measurement pairs"). The distribution of the number of TDS-CL measurement pairs for these 71 wells are shown in Figure 5A-1 below. As shown on Figure 5A-1, there is an abundance of wells with TDS-CL measurement pairs.

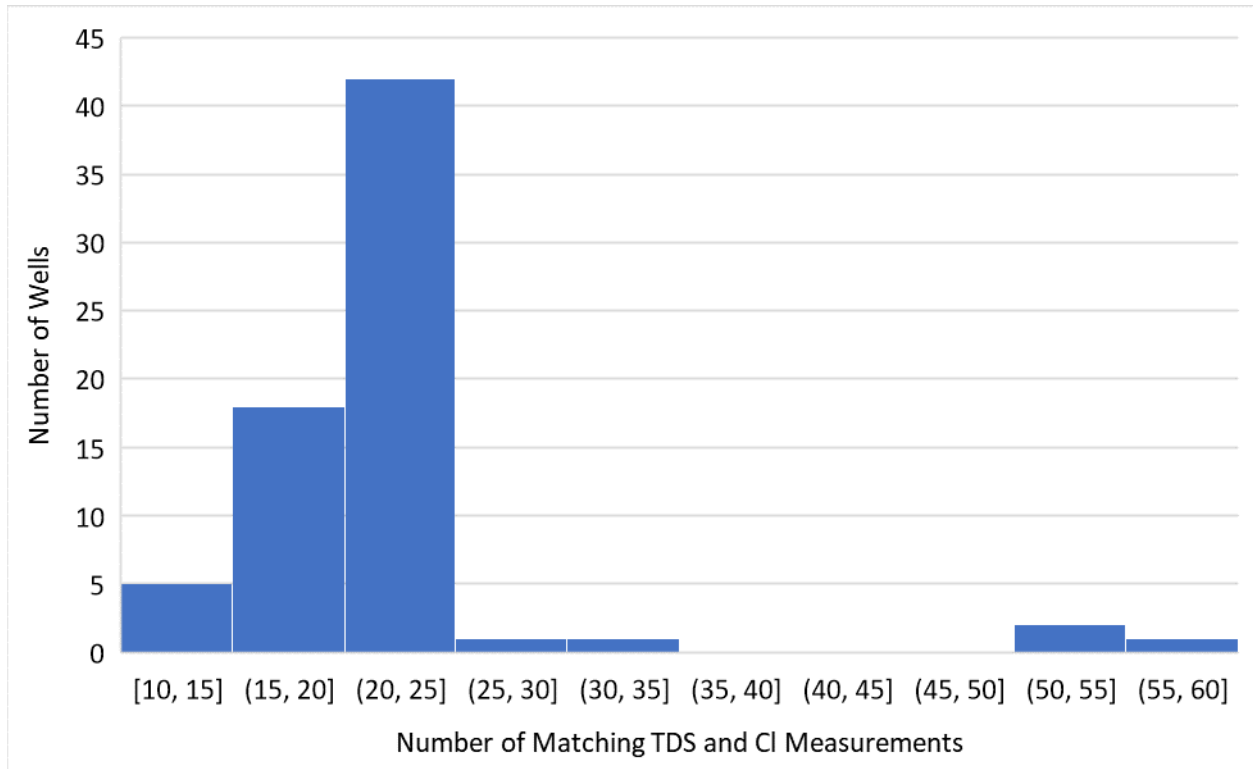


Figure 5A-1. Distribution of TDS-CL Measurement Pairs

Figure 5A-2 analyzes the temporal distribution of these TDS-CL measurement pairs. As shown on Figure 5A-2, very limited TDS-CL measurement pairs were collected beyond 2008, which is especially due to the lack of chloride data during this period. However, a large quantity of TDS-CL measurement pairs data was collected between 2002 and 2008.

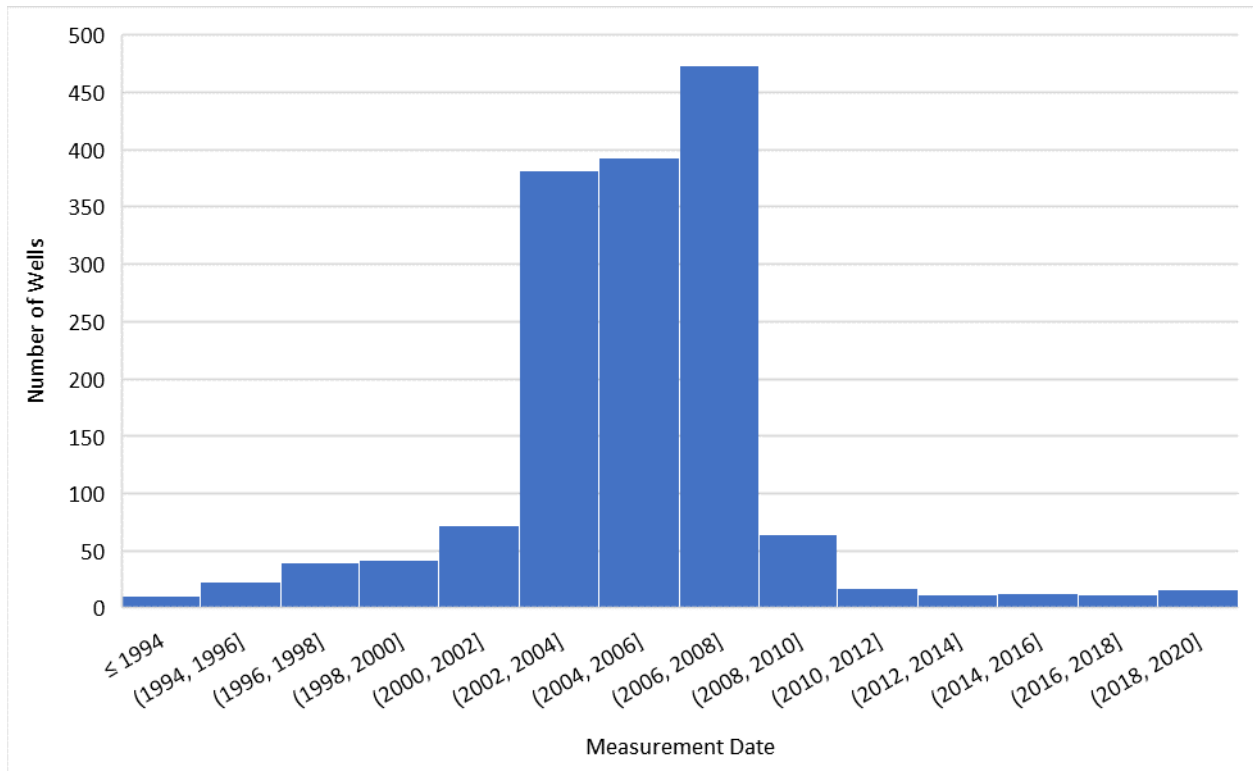


Figure 5A-2. Distribution of TDS-CL Measurement Dates

With the existing TDS-CL measurement pairs data, Figure 5A-3 shows a scatter plot of TDS and chloride concentrations¹ in lower 180-Foot/400-Foot Aquifer wells. As shown in Figure 5A-3 below, there is a strong positive linear relationship between chloride concentration and TDS concentration.

¹ Average concentrations were computed for wells that have duplicate measurements.

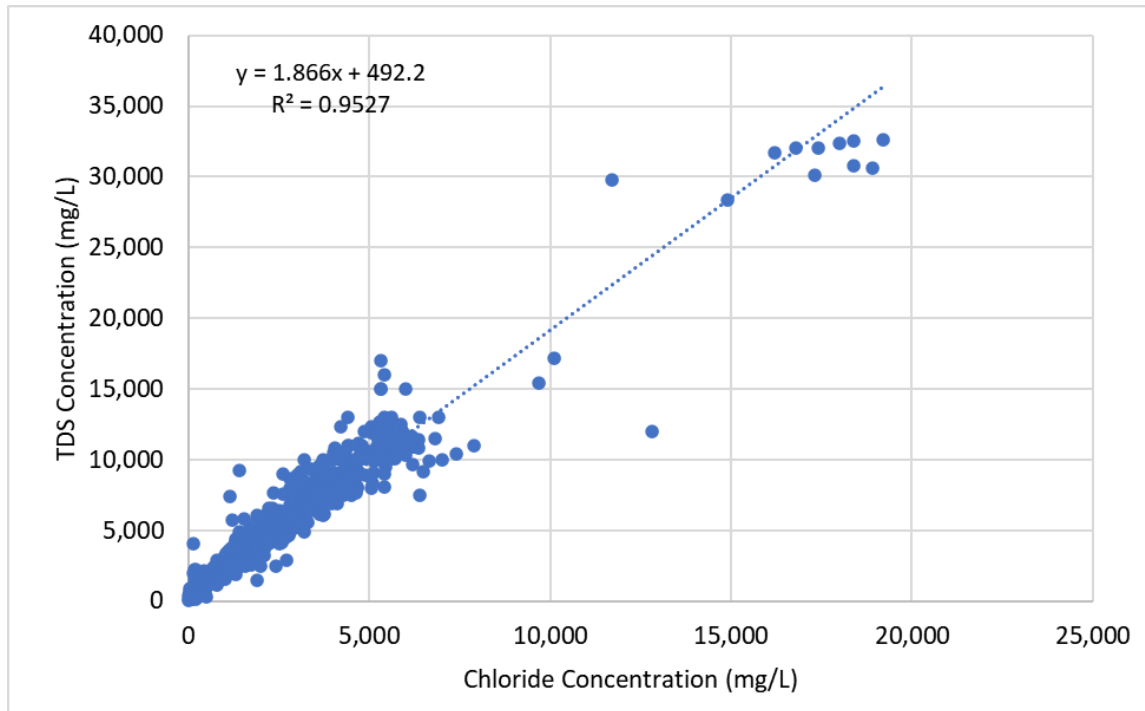


Figure 5A-3. TDS vs. Chloride Concentration, Linear Scale

To examine this relationship further, the below (Figure 5A-4) plots the TDS and chloride concentrations on a log-log scale. As shown on this graph, the TDS-chloride concentrations relationship weakens at very low (below 100 mg/L) chloride concentrations. This is consistent with the fact that a certain level of TDS is associated with other naturally occurring constituents. It appears that the natural TDS within this aquifer is low, at approximately 300 mg/L TDS. Increase in TDS concentrations above this level is strongly correlated to chloride concentration increases.

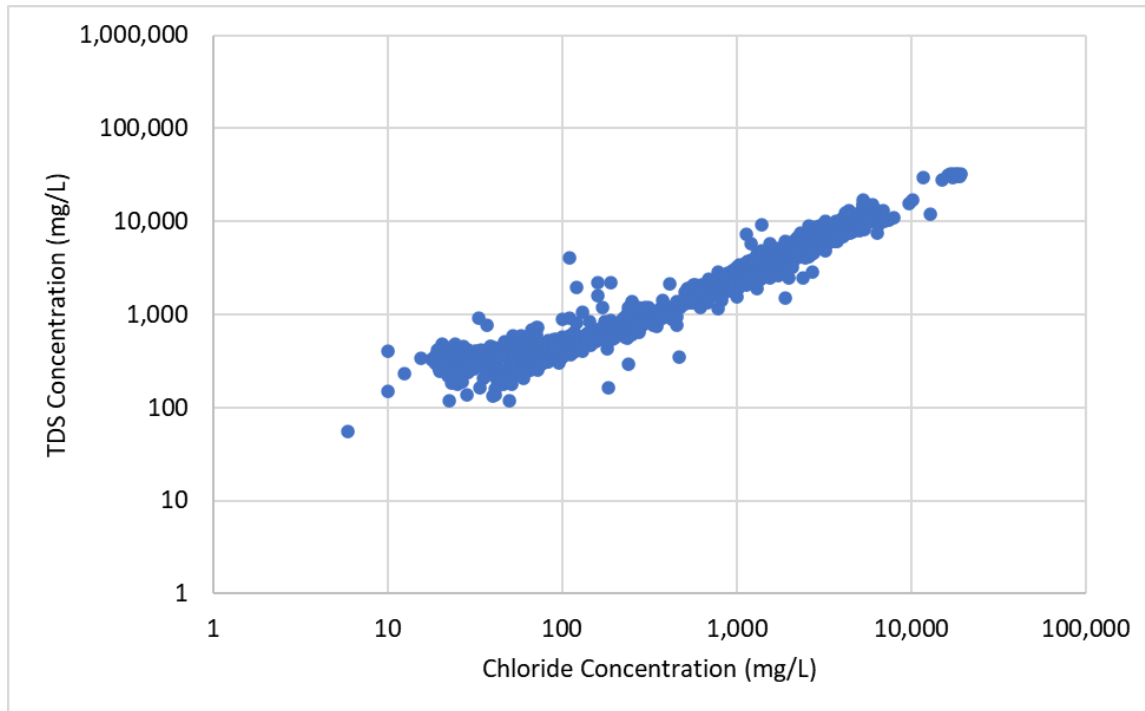


Figure 5A-4. TDS vs. Chloride Concentration, Log-Log Scale

Therefore, a trendline is fitted to these historic TDS-CL measurements within the lower 180-Foot/400-Foot Aquifer assuming a natural TDS at 300 mg/L (Figure 5A-5). The fitted relationship establishes a conversion between TDS and chloride concentration within this aquifer, and is as follows:

$$TDS (mg/L) = 1.91 \times Chloride (mg/L) + 300$$

The Monterey Subbasin GSP adopts a seawater intrusion definition at of 500 mg/L chloride. Based on this relationship, it can be concluded that (1) elevated TDS concentration that is significantly above 300 mg/L in the lower 180-Foot/400-Foot Aquifer is associated with increases in chloride concentration; and (2) a TDS concentration at approximately 1,250 mg/L in this aquifer is equivalent to a chloride concentration at 500 mg/L.

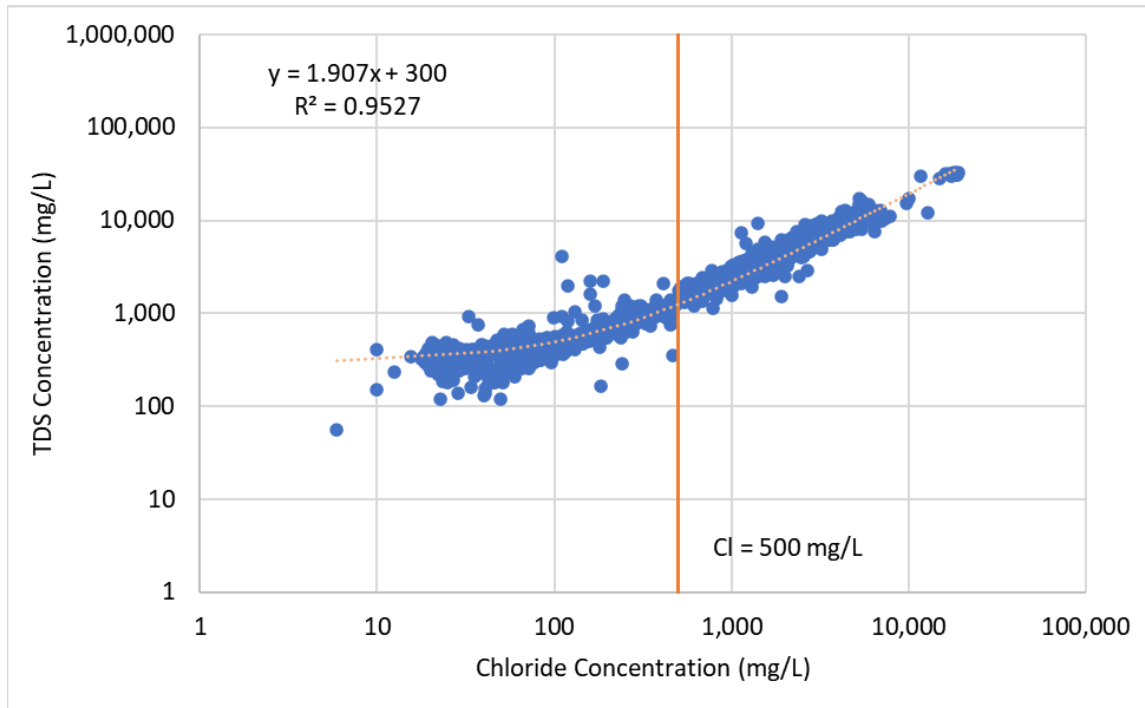
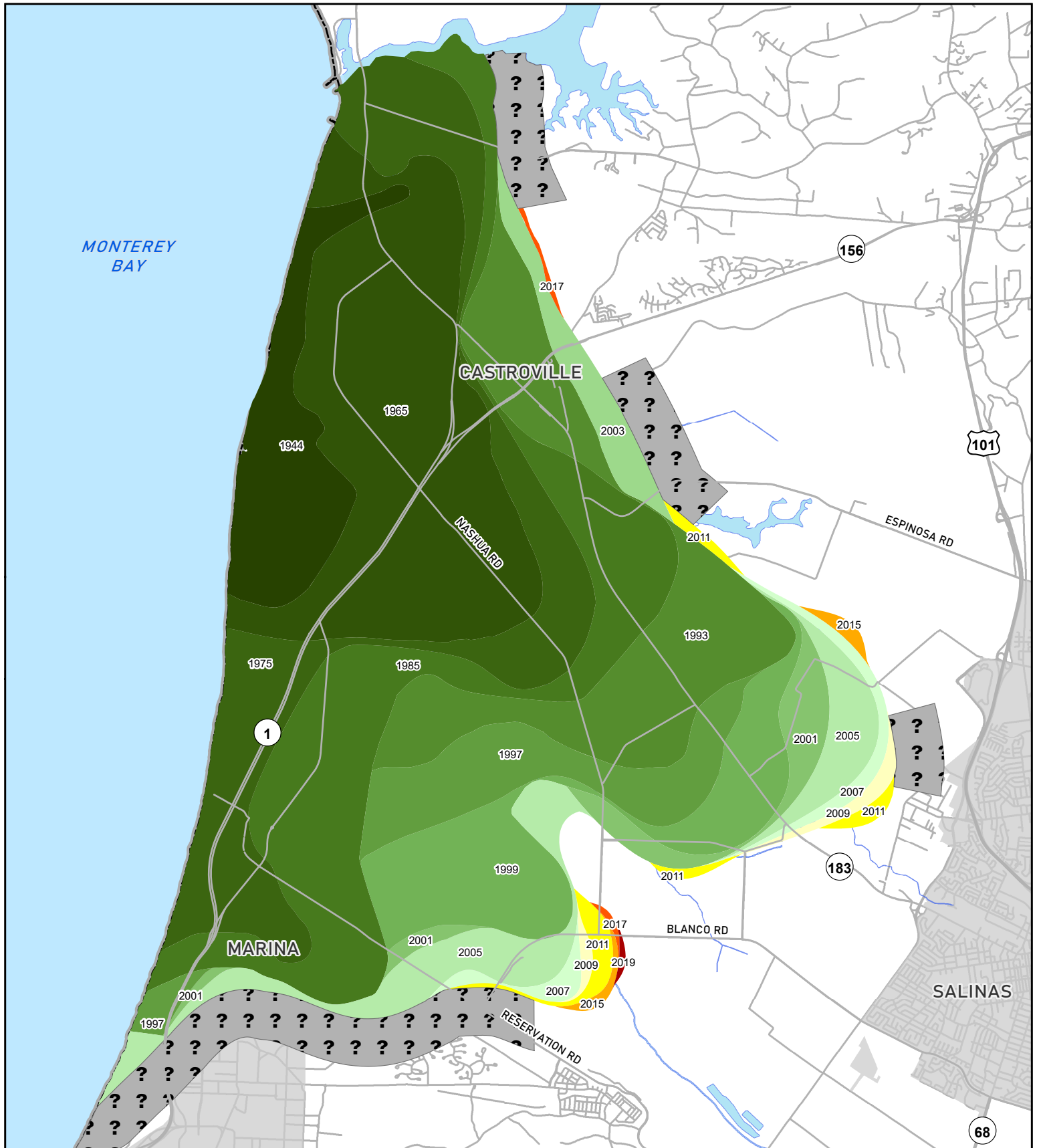


Figure 5A-5. TDS vs. Chloride Concentration, Log-Log Scale with Trendline

Appendix 5B

MCWRA Seawater Intrusion Maps



Sewer Intruded Areas By Year

1944	1999	2009
1965	2001	2011/2013
1975	2003	2015
1985	2005	2017
1993	2007	2019
1997		No Data

Historical Seawater Intrusion Map

Pressure 180-Foot Aquifer
500 mg/L or Greater Chloride Areas

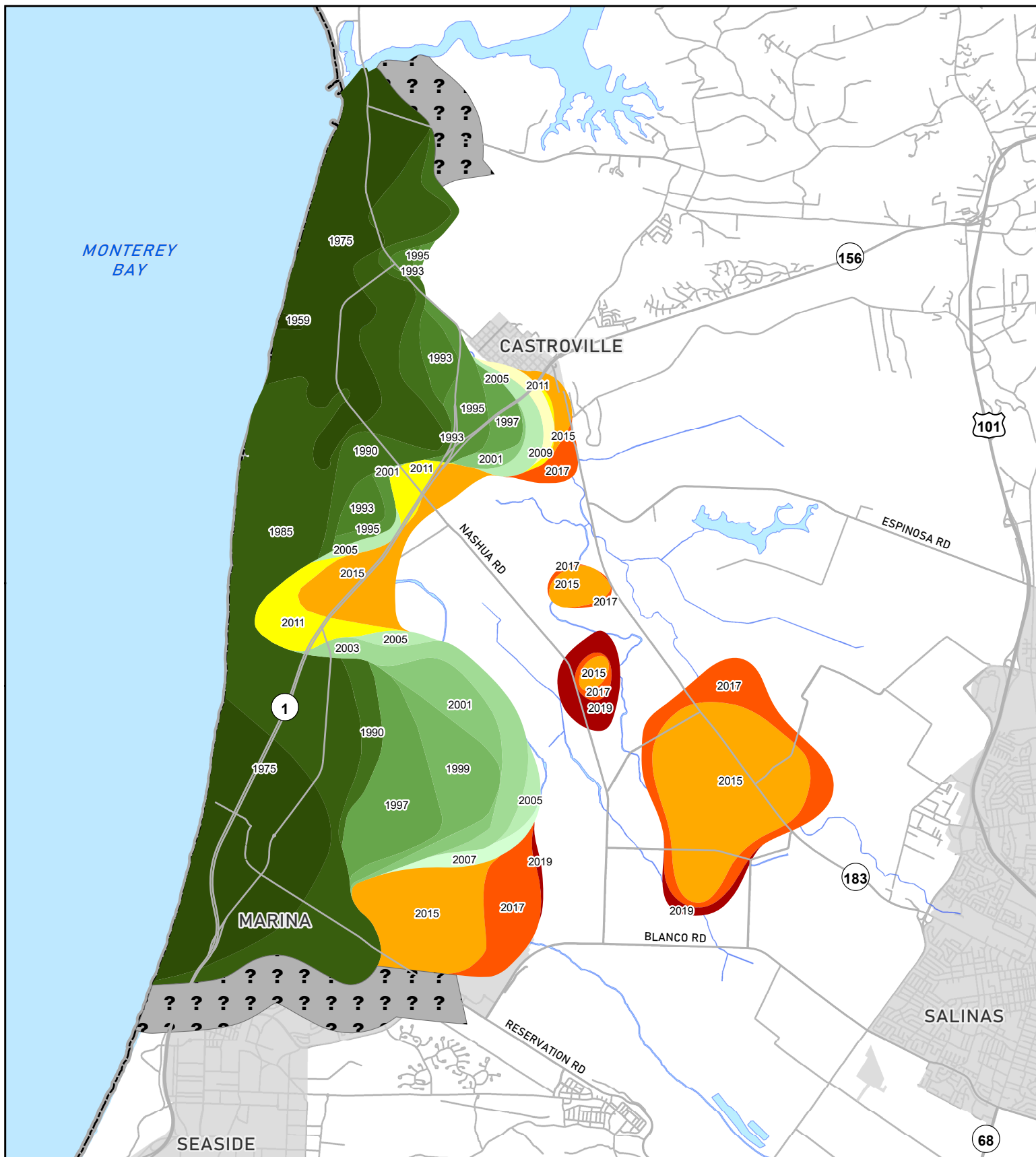


0 0.5 1 1.5 2 Miles



Monterey County
Water Resources Agency

Date: 1/28/2020



Historical Seawater Intrusion Map

Pressure 400-Foot Aquifer
500 mg/L or Greater Chloride Areas



0 0.5 1 1.5 2 Miles



Monterey County
Water Resources Agency

Date: 1/28/2020

Appendix 6A

Supplemental Water Budget Results Tables

Historical Annual Groundwater System Budget Results for Monterey Subbasin
Table 6A-1

Water Year (Oct-Sept)	DWR Water Year Type ^(a)	Recharge	Pumping	Net Cross-Boundary Flow (Presumed Freshwater)	Net Cross-Boundary Flow (Presumed Seawater)	Annual Change in Groundwater Storage [AFY]	Cumulative Change in Groundwater Storage [AF]
2004	BN	6,557	-6,466	-10,825	0	-10,734	-10,734
2005	W	18,022	-5,939	-9,049	0	3,034	-7,700
2006	W	19,069	-5,801	-9,715	0	3,553	-4,147
2007	D	2,136	-5,982	-9,955	0	-13,801	-17,948
2008	C	8,590	-5,535	-10,512	0	-7,456	-25,404
2009	BN	10,705	-5,404	-10,071	0	-4,771	-30,175
2010	AN	16,446	-5,499	-7,184	0	3,763	-26,412
2011	AN	12,259	-5,423	-6,794	0	42	-26,370
2012	BN	1,775	-5,480	-7,752	0	-11,457	-37,827
2013	C	5,135	-5,636	-7,665	0	-8,166	-45,993
2014	C	1,886	-6,354	-9,621	0	-14,090	-60,082
2015	D	6,935	-4,530	-8,631	0	-6,226	-66,308
2016	AN	15,095	-5,160	-9,815	0	120	-66,188
2017	W	23,486	-5,508	-9,288	0	8,690	-57,498
2018	AN	2,722	-5,900	-5,841	0	-9,019	-66,517
AVERAGE (AFY)	-	10,055	-5,641	-8,848	0	-4,434	-

Abbreviations

AFY = acre-feet per year
DWR = California Department of Water Resources
WY = Water Year






Notes:

(a) Water Year Types were developed from the DWR method defined in DWR, 2021 and are classified as follows: W = Wet, AN = Above Normal, BN = Below Normal, D = Dry, C = Critical. Colors indicate Water Year Type where green is wetter and red is drier.

Sources:

(1) DWR, 2021. Sustainable Groundwater Management Act Water Year Type Dataset Development Report. 17pp.

DWR Water Year Type

 = Wet
 = Above Normal
 = Below Normal
 = Dry
 = Critical

Historical Annual Groundwater System Budget Results for Marina-Ord Area
Table 6A-2

Water Year (Oct-Sept)	DWR Water Year Type ^(a)	Recharge	Pumping	Net Cross-Boundary Flow (Presumed Freshwater)	Net Cross-Boundary Flow (Presumed Seawater)	Net Corral de Tierra Exchange	Annual Change in Groundwater Storage [AFY]	Cumulative Change in Groundwater Storage [AF]
2004	BN	3,268	-5,414	-5,742	0	1,604	-6,284	-6,284
2005	W	11,243	-4,886	-4,232	0	1,604	3,730	-2,554
2006	W	12,038	-4,748	-5,112	0	1,592	3,769	1,215
2007	D	1,099	-4,929	-5,462	0	1,633	-7,659	-6,444
2008	C	4,599	-4,482	-5,848	0	1,607	-4,123	-10,568
2009	BN	6,723	-4,351	-5,678	0	1,520	-1,786	-12,354
2010	AN	10,384	-4,446	-3,514	0	1,646	4,070	-8,284
2011	AN	7,471	-4,369	-3,648	0	1,706	1,159	-7,125
2012	BN	1,023	-4,427	-4,241	0	1,649	-5,997	-13,122
2013	C	2,780	-4,584	-4,109	0	1,592	-4,321	-17,443
2014	C	1,040	-4,534	-5,804	0	1,426	-7,873	-25,316
2015	D	4,433	-3,606	-5,266	0	1,465	-2,974	-28,289
2016	AN	9,398	-3,278	-6,160	0	1,283	1,244	-27,046
2017	W	15,176	-3,417	-5,885	0	1,212	7,087	-19,959
2018	AN	1,489	-3,712	-3,924	0	1,628	-4,519	-24,478
AVERAGE (AFY)	-	6,144	-4,346	-4,975	0	1,544	-1,632	-

Abbreviations

AFY = acre-feet per year
DWR = California Department of Water Resources
WY = Water Year

Notes:

(a) Water Year Types were developed from the DWR method defined in DWR, 2021 and are classified as follows: W = Wet, AN = Above Normal, BN = Below Normal, D = Dry, C = Critical. Colors indicate Water Year Type where green is wetter and red is drier.

Sources:

(1) DWR, 2021. Sustainable Groundwater Management Act Water Year Type Dataset Development Report. 17pp.

DWR Water Year Type

- = Wet
- = Above Normal
- = Below Normal
- = Dry
- = Critical

Historical Annual Groundwater System Budget Results for Corral de Tierra Area
Table 6A-3

Water Year (Oct-Sept)	DWR Water Year Type ^(a)	Recharge	Pumping	Net Cross-Boundary Flow (Presumed Freshwater)	Net Cross-Boundary Flow (Presumed Seawater)	Net Marina-Ord Exchange	Annual Change in Groundwater Storage [AFY]	Cumulative Change in Groundwater Storage [AF]
2004	BN	3,289	-1,053	-5,083	0	-1,604	-4,450	-4,450
2005	W	6,779	-1,053	-4,818	0	-1,604	-696	-5,146
2006	W	7,031	-1,053	-4,603	0	-1,592	-216	-5,362
2007	D	1,037	-1,053	-4,493	0	-1,633	-6,141	-11,504
2008	C	3,991	-1,053	-4,664	0	-1,607	-3,333	-14,837
2009	BN	3,982	-1,053	-4,393	0	-1,520	-2,984	-17,821
2010	AN	6,062	-1,053	-3,670	0	-1,646	-306	-18,127
2011	AN	4,789	-1,053	-3,146	0	-1,706	-1,117	-19,244
2012	BN	752	-1,053	-3,511	0	-1,649	-5,461	-24,705
2013	C	2,355	-1,052	-3,556	0	-1,592	-3,845	-28,550
2014	C	846	-1,820	-3,817	0	-1,426	-6,217	-34,767
2015	D	2,502	-924	-3,366	0	-1,465	-3,252	-38,019
2016	AN	5,696	-1,881	-3,656	0	-1,283	-1,124	-39,143
2017	W	8,310	-2,092	-3,403	0	-1,212	1,604	-37,539
2018	AN	1,233	-2,188	-1,917	0	-1,628	-4,500	-42,039
AVERAGE (AFY)	-	3,910	-1,296	-3,873	0	-22,166	-2,803	-

Abbreviations

AFY = acre-feet per year
DWR = California Department of Water Resources
WY = Water Year

Notes:

(a) Water Year Types were developed from the DWR method defined in DWR, 2021 and are classified as follows: W = Wet, AN = Above Normal, BN = Below Normal, D = Dry, C = Critical. Colors indicate Water Year Type where green is wetter and red is drier.

Sources:

(1) DWR, 2021. Sustainable Groundwater Management Act Water Year Type Dataset Development Report. 17pp.

DWR Water Year Type

- = Wet
- = Above Normal
- = Below Normal
- = Dry
- = Critical

Table 6A-4. Comparison of Projected Water Budget Results Under “No Project” Scenarios with Variable Climate Conditions and Measurable Objective Boundary Conditions, Marina-Ord Area

Net Annual Groundwater Flows (a) (AFY)	Historical Annual Inflows/Outflows (WY 2004-2018)	Projected Annual Inflows/Outflows (b) Measurable Objective Boundary Conditions		
		Baseline Climate Conditions	2030 Climate Conditions	2070 Climate Conditions
Recharge				
● Rainfall, leakage, irrigation	6,144	6,356	6,823	7,509
	<u>6,144</u>	<u>6,356</u>	<u>6,823</u>	<u>7,509</u>
Well Pumping				
● Well Pumping	-4,346	-8,767	-8,767	-8,767
	<u>-4,346</u>	<u>-8,767</u>	<u>-8,767</u>	<u>-8,767</u>
Net Inter-Basin Flow				
● Seaside Subbasin	1,310	1,589	1,361	1,033
● 180/400 Foot Aquifer Subbasin	-8,633	-1,694	-1,927	-2,306
● Ocean (Presumed Freshwater)	-524	-721	-752	-804
● Ocean (Presumed Seawater)	2,872	2,288	2,369	2,534
	<u>-4,975</u>	<u>1,461</u>	<u>1,051</u>	<u>457</u>
Net Intra-basin Flow				
● From Corral de Tierra Area WBZ	1,544	998	1,026	1,063
	<u>1,544</u>	<u>998</u>	<u>1,026</u>	<u>1,063</u>
Net Surface Water Exchange				
● Salinas River Exchange	0	0	0	0
	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
NET ANNUAL CHANGE IN GROUNDWATER STORAGE	-1,632	49	133	262

Abbreviations:

AFY = acre-feet per year
WBZ = Water Budget Zone
WY = Water Year

Notes:

- (a) The Marina-Ord Area Zone Budget includes inflows to and outflows from the Reservation Road portion of the Corral de Tierra Management Area.
- (b) Positive values indicate a net inflow and negative values indicate a net outflow.

Table 6A-5. Comparison of Projected Water Budget Results Under “No Project” Scenarios with Variable Conditions and Measurable Objective Boundary Conditions, Corral de Tierra Area

Net Annual Groundwater Flows (a) (AFY)	Historical Annual Inflows/Outflows (WY 2004-2018)	Projected Annual Inflows/Outflows (b) Measurable Objective Boundary Conditions		
		Baseline Climate Conditions	2030 Climate Conditions	2070 Climate Conditions
Recharge				
● Rainfall, leakage, irrigation	3,910	3,796	4,105	4,443
	<u>3,910</u>	<u>3,796</u>	<u>4,105</u>	<u>4,443</u>
Well Pumping				
● Well Pumping	-1,296	-2,188	-2,188	-2,189
	<u>-1,296</u>	<u>-2,188</u>	<u>-2,188</u>	<u>-2,189</u>
Net Inter-Basin Flow				
● Seaside Subbasin	-392	-62	-103	-148
● 180/400 Foot Aquifer Subbasin	-3,632	-1,376	-1,485	-1,595
	<u>-4,024</u>	<u>-1,438</u>	<u>-1,588</u>	<u>-1,743</u>
Net Intra-basin Flow				
● From Marina-Ord Area WBZ	-1,544	-998	-1,026	-1,063
	<u>-1,544</u>	<u>-998</u>	<u>-1,026</u>	<u>-1,063</u>
Net Surface Water Exchange				
● Salinas River Exchange	151	259	254	249
	<u>151</u>	<u>259</u>	<u>254</u>	<u>249</u>
NET ANNUAL CHANGE IN GROUNDWATER STORAGE	-2,803	-569	-443	-303

Abbreviations:

AFY = acre-feet per year
WBZ = Water Budget Zone
WY = Water Year

Notes:

- (a) The Corral de Tierra Area Zone Budget does not include inflows to and outflows from the Reservation Road portion of the Corral de Tierra Management Area
- (b) Positive values indicate a net inflow and negative values indicate a net outflow.

TABLE 6A-A

DRAFT

AVERAGE ANNUAL HISTORICAL GROUNDWATER BUDGET - MARINA/ORD AREA WATER BUDGET ZONE⁽¹⁾

DWR Water Years 2004 - 2018

NET ANNUAL GROUNDWATER FLOWS⁽²⁾	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
Recharge (AFY)	2,557	639	0	1,794	1,154	6,144
Well Pumping (AFY) ⁽³⁾	0	0	-1,336	-467	-2,543	-4,346
Net Cross-Boundary Flows (AFY)	-886	-840	-656	-1,242	194	-3,431
<i>Seaside Subbasin</i>	-13	0	0	2,268	-945	1,310
<i>Presumed Freshwater</i>	-13	0	0	2,268	-945	1,310
<i>Presumed Seawater</i>	0	0	0	0	0	0
<i>180/400 Subbasin</i>	-349	-1,236	-1,115	-5,071	-861	-8,633
<i>Presumed Freshwater</i>	-349	-840	-656	-3,089	-826	-5,761
<i>Presumed Seawater</i>	0	-396	-459	-1,982	-35	-2,872
<i>Corral de Tierra WBZ</i>	0	0	0	-421	1,965	1,544
<i>Presumed Freshwater</i>	0	0	0	-421	1,965	1,544
<i>Presumed Seawater</i>	0	0	0	0	0	0
<i>Ocean</i>	-524	396	459	1,982	35	2,348
<i>Presumed Freshwater</i>	-524	0	0	0	0	-524
<i>Presumed Seawater</i>	0	396	459	1,982	35	2,872
Salinas River Exchange (AFY)	0	0	0	0	0	0
Overlying Unit Exchange (AFY)	0	1,894	1,705	-273	276	3,602
Underlying Unit Exchange (AFY)	-1,595	-1,778	258	-276	0	-3,392
CHANGE IN GROUNDWATER STORAGE						
ANNUAL AVERAGE (AFY)	76	-87	-29	-464	-918	-1,422
WY 2004 - 2018 CUMULATIVE (AF)	1,138	-1,299	-442	-6,963	-13,768	-21,334

Notes:

- (1) Marina/Ord Area WBZ includes the Reservation Road portion of the Corral de Tierra Management Area.
- (2) All values in acre-feet per year (AFY) unless otherwise noted.
- (3) Includes 287 AFY of pumping from the Reservation Road portion of the Corral de Tierra Management Area.

Abbreviations:

AF = acre-feet
 AFY = acre-feet per year
 DWR = California Department of Water Resources
 WBZ = Water Budget Zone
 WY = DWR Water Year (October - September)

TABLE 6A-B
AVERAGE ANNUAL CURRENT GROUNDWATER BUDGET - MARINA/ORD AREA WATER BUDGET ZONE⁽¹⁾
DWR Water Years 2015 - 2018

DRAFT

NET ANNUAL GROUNDWATER FLOWS⁽²⁾	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
Recharge (AFY)	3,360	791	0	2,207	1,266	7,624
Well Pumping (AFY) ⁽³⁾	0	0	-581	-198	-2,723	-3,503
Net Cross-Boundary Flows (AFY)	-855	-855	-935	-872	-394	-3,912
<i>Seaside Subbasin</i>	-12	0	1	2,515	-788	1,715
<i>Presumed Freshwater</i>	-12	0	1	2,515	-788	1,715
<i>Presumed Seawater</i>	0	0	0	0	0	0
<i>180/400 Subbasin</i>	-268	-1,344	-1,470	-5,204	-1,421	-9,707
<i>Presumed Freshwater</i>	-268	-855	-936	-3,008	-1,382	-6,450
<i>Presumed Seawater</i>	0	-489	-534	-2,196	-39	-3,258
<i>Corral de Tierra WBZ</i>	0	0	0	-379	1,776	1,397
<i>Presumed Freshwater</i>	0	0	0	-379	1,776	1,397
<i>Presumed Seawater</i>	0	0	0	0	0	0
<i>Ocean</i>	-574	489	534	2,196	39	2,684
<i>Presumed Freshwater</i>	-574	0	0	0	0	-574
<i>Presumed Seawater</i>	0	489	534	2,196	39	3,258
Salinas River Exchange (AFY)	0	0	0	0	0	0
Overlying Unit Exchange (AFY)	0	2,044	1,919	376	1,428	5,767
Underlying Unit Exchange (AFY)	-1,854	-2,029	-397	-1,428	0	-5,709

CHANGE IN GROUNDWATER STORAGE	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
ANNUAL AVERAGE (AFY)	651	-48	5	83	-423	267
<i>WY 2004 - 2018 CUMULATIVE (AF)</i>	<i>2,604</i>	<i>-194</i>	<i>18</i>	<i>334</i>	<i>-1,694</i>	<i>1,069</i>

Notes:

- (1) Marina/Ord Area WBZ includes the Reservation Road portion of the Corral de Tierra Management Area.
(2) All values in acre-feet per year (AFY) unless otherwise noted.
(3) Includes 285 AFY of pumping from the Reservation Road portion of the Corral de Tierra Management Area.

Abbreviations:

AF = acre-feet
AFY = acre-feet per year
DWR = California Department of Water Resources
WBZ = Water Budget Zone
WY = DWR Water Year (October - September)

TABLE 6A-C

DRAFT

AVERAGE ANNUAL PROJECTED GROUNDWATER BUDGET - MARINA/ORD AREA WATER BUDGET ZONE⁽¹⁾

Scenario: 2030 Climate, no projects, MT boundary conditions

NET ANNUAL GROUNDWATER FLOWS⁽²⁾	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
Recharge (AFY)	3,226	648	0	1,764	1,184	6,823
Well Pumping (AFY) ⁽³⁾	0	0	-2,752	-954	-5,060	-8,767
Net Cross-Boundary Flows (AFY)	-1,121	-624	493	2,959	95	1,801
<i>Seaside Subbasin</i>	-16	-1	-2	2,632	-101	2,513
<i>180/400 Subbasin</i>	-380	-900	-17	-1,547	-1,004	-3,849
<i>Corral de Tierra WBZ</i>	0	0	0	-238	1,161	923
<i>Ocean</i>	-725	276	512	2,112	38	2,214
<i>Presumed Freshwater</i>	-725	0	0	0	0	-725
<i>Presumed Seawater</i>	0	276	512	2,112	38	2,939
Salinas River Exchange (AFY)	0	0	0	0	0	0
Overlying Unit Exchange (AFY)	0	2,094	2,140	-92	3,653	7,795
Underlying Unit Exchange (AFY)	-2,052	-2,109	118	-3,653	0	-7,697
CHANGE IN GROUNDWATER STORAGE	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
ANNUAL AVERAGE (AFY)	52	9	-1	23	-128	-44
50-YEAR CUMULATIVE (AF)	787	128	-10	347	-1,919	-667

Notes:

- (1) Marina/Ord Area WBZ includes the Reservation Road portion of the Corral de Tierra Management Area.
(2) All values in acre-feet per year (AFY) unless otherwise noted.
(3) Includes 287 AFY of pumping from the Reservation Road portion of the Corral de Tierra Management Area.

Abbreviations:

AF = acre-feet
AFY = acre-feet per year
DWR = California Department of Water Resources
MT = Minimum Thresholds
WBZ = Water Budget Zone
WY = DWR Water Year (October - September)

TABLE 6A-D

DRAFT

AVERAGE ANNUAL PROJECTED GROUNDWATER BUDGET - MARINA/ORD AREA WATER BUDGET ZONE⁽¹⁾

Scenario: 2030 Climate, no projects, MO boundary conditions

NET ANNUAL GROUNDWATER FLOWS⁽²⁾	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
Recharge (AFY)	3,226	648	0	1,764	1,184	6,823
Well Pumping (AFY) ⁽³⁾	0	0	-2,752	-954	-5,060	-8,767
Net Cross-Boundary Flows (AFY)	-1,167	-472	649	3,160	-94	2,078
Seaside Subbasin	-19	-2	-3	1,764	-380	1,361
180/400 Subbasin	-396	-598	245	-200	-979	-1,927
Corral de Tierra WBZ	0	0	0	-206	1,232	1,026
Ocean	-752	128	407	1,802	32	1,617
Presumed Freshwater	-752	0	0	0	0	-752
Presumed Seawater	0	128	407	1,802	32	2,369
Salinas River Exchange (AFY)	0	0	0	0	0	0
Overlying Unit Exchange (AFY)	0	2,017	2,183	102	3,927	8,228
Underlying Unit Exchange (AFY)	-1,996	-2,138	-71	-3,927	0	-8,132
CHANGE IN GROUNDWATER STORAGE	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
ANNUAL AVERAGE (AFY)	63	56	8	145	-43	230
50-YEAR CUMULATIVE (AF)	952	841	122	2,174	-638	3,451

Notes:

- (1) Marina/Ord Area WBZ includes the Reservation Road portion of the Corral de Tierra Management Area.
(2) All values in acre-feet per year (AFY) unless otherwise noted.
(3) Includes 287 AFY of pumping from the Reservation Road portion of the Corral de Tierra Management Area.

Abbreviations:

AF = acre-feet
AFY = acre-feet per year
DWR = California Department of Water Resources
MO = Measurable Objectives
WBZ = Water Budget Zone
WY = DWR Water Year (October - September)

TABLE 6A-E

DRAFT

AVERAGE ANNUAL PROJECTED GROUNDWATER BUDGET - MARINA/ORD AREA WATER BUDGET ZONE⁽¹⁾

Scenario: 2030 Climate, no projects, seawater intrusion protective boundary conditions

NET ANNUAL GROUNDWATER FLOWS⁽²⁾	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
Recharge (AFY)	3,226	648	0	1,764	1,184	6,823
Well Pumping (AFY) ⁽³⁾	0	0	-2,752	-954	-5,060	-8,767
Net Cross-Boundary Flows (AFY)	-1,227	-492	1,247	3,546	-752	2,323
Seaside Subbasin	-24	-3	-4	454	-770	-347
180/400 Subbasin	-409	-350	1,042	2,084	-1,196	1,171
Corral de Tierra WBZ	0	0	0	-208	1,193	985
Ocean	-794	-138	209	1,216	21	514
Presumed Freshwater	-794	0	0	0	0	-794
Presumed Seawater	0	-138	209	1,216	21	1,308
Salinas River Exchange (AFY)	0	0	0	0	0	0
Overlying Unit Exchange (AFY)	0	1,922	2,090	609	4,676	9,298
Underlying Unit Exchange (AFY)	-1,920	-1,987	-565	-4,676	0	-9,148
CHANGE IN GROUNDWATER STORAGE	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
ANNUAL AVERAGE (AFY)	79	92	20	290	48	529
50-YEAR CUMULATIVE (AF)	1,186	1,382	294	4,347	722	7,931

Notes:

- (1) Marina/Ord Area WBZ includes the Reservation Road portion of the Corral de Tierra Management Area.
(2) All values in acre-feet per year (AFY) unless otherwise noted.
(3) Includes 287 AFY of pumping from the Reservation Road portion of the Corral de Tierra Management Area.

Abbreviations:

AF = acre-feet
AFY = acre-feet per year
DWR = California Department of Water Resources
WBZ = Water Budget Zone
WY = DWR Water Year (October - September)

TABLE 6A-F

DRAFT

AVERAGE ANNUAL PROJECTED GROUNDWATER BUDGET - MARINA/ORD AREA WATER BUDGET ZONE⁽¹⁾

Scenario: 2030 Climate, with projects, MT boundary conditions

NET ANNUAL GROUNDWATER FLOWS⁽²⁾	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
Recharge (AFY)	3,226	648	0	1,764	1,184	6,823
Well Pumping (AFY) ⁽³⁾	0	0	-1,364	-476	-2,648	-4,488
Net Cross-Boundary Flows (AFY)	-1,138	-761	-423	426	-384	-2,279
<i>Seaside Subbasin</i>	-18	-2	-2	2,052	-253	1,776
<i>180/400 Subbasin</i>	-382	-999	-859	-3,280	-1,314	-6,833
<i>Corral de Tierra WBZ</i>	0	0	0	-251	1,149	898
<i>Ocean</i>	-738	239	438	1,906	34	1,879
<i>Presumed Freshwater</i>	-738	0	0	0	0	-738
<i>Presumed Seawater</i>	0	239	438	1,906	34	2,617
Salinas River Exchange (AFY)	0	0	0	0	0	0
Overlying Unit Exchange (AFY)	0	2,070	1,889	86	1,742	5,788
Underlying Unit Exchange (AFY)	-2,032	-1,945	-97	-1,742	0	-5,816
CHANGE IN GROUNDWATER STORAGE	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
ANNUAL AVERAGE (AFY)	56	13	6	58	-106	27
50-YEAR CUMULATIVE (AF)	839	202	84	876	-1,591	410

Notes:

- (1) Marina/Ord Area WBZ includes the Reservation Road portion of the Corral de Tierra Management Area.
(2) All values in acre-feet per year (AFY) unless otherwise noted.
(3) Includes 287 AFY of pumping from the Reservation Road portion of the Corral de Tierra Management Area.

Abbreviations:

AF = acre-feet
AFY = acre-feet per year
DWR = California Department of Water Resources
MT = Minimum Thresholds
WBZ = Water Budget Zone
WY = DWR Water Year (October - September)

TABLE 6A-G

DRAFT

AVERAGE ANNUAL PROJECTED GROUNDWATER BUDGET - MARINA/ORD AREA WATER BUDGET ZONE⁽¹⁾

Scenario: 2030 Climate, with projects, MO boundary conditions

NET ANNUAL GROUNDWATER FLOWS⁽²⁾	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
Recharge (AFY)	3,226	648	0	1,764	1,184	6,823
Well Pumping (AFY) ⁽³⁾	0	0	-1,364	-476	-2,648	-4,488
Net Cross-Boundary Flows (AFY)	-1,183	-609	-261	623	-574	-2,005
<i>Seaside Subbasin</i>	-21	-2	-3	1,173	-535	612
<i>180/400 Subbasin</i>	-398	-698	-590	-1,928	-1,287	-4,901
<i>Corral de Tierra WBZ</i>	0	0	0	-219	1,220	1,001
<i>Ocean</i>	-764	91	332	1,596	28	1,283
<i>Presumed Freshwater</i>	-764	0	0	0	0	-764
<i>Presumed Seawater</i>	0	91	332	1,596	28	2,047
Salinas River Exchange (AFY)	0	0	0	0	0	0
Overlying Unit Exchange (AFY)	0	1,994	1,932	286	2,017	6,228
Underlying Unit Exchange (AFY)	-1,976	-1,972	-293	-2,017	0	-6,257
CHANGE IN GROUNDWATER STORAGE	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
ANNUAL AVERAGE (AFY)	67	61	14	180	-21	301
50-YEAR CUMULATIVE (AF)	1,005	911	210	2,696	-313	4,509

Notes:

- (1) Marina/Ord Area WBZ includes the Reservation Road portion of the Corral de Tierra Management Area.
(2) All values in acre-feet per year (AFY) unless otherwise noted.
(3) Includes 287 AFY of pumping from the Reservation Road portion of the Corral de Tierra Management Area.

Abbreviations:

AF = acre-feet
AFY = acre-feet per year
DWR = California Department of Water Resources
MO = Measurable Objectives
WBZ = Water Budget Zone
WY = DWR Water Year (October - September)

TABLE 6A-H

DRAFT

AVERAGE ANNUAL PROJECTED GROUNDWATER BUDGET - MARINA/ORD AREA WATER BUDGET ZONE⁽¹⁾*Scenario: 2030 Climate, with projects, seawater intrusion protective boundary conditions*

NET ANNUAL GROUNDWATER FLOWS⁽²⁾	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
Recharge (AFY)	3,226	648	0	1,764	1,184	6,823
Well Pumping (AFY) ⁽³⁾	0	0	-1,364	-476	-2,648	-4,488
Net Cross-Boundary Flows (AFY)	-1,244	-630	340	1,006	-1,234	-1,762
<i>Seaside Subbasin</i>	-26	-4	-4	-152	-928	-1,115
<i>180/400 Subbasin</i>	-411	-451	209	368	-1,503	-1,788
<i>Corral de Tierra WBZ</i>	0	0	0	-222	1,180	958
<i>Ocean</i>	-806	-175	135	1,011	17	182
<i>Presumed Freshwater</i>	-806	0	0	0	0	-806
<i>Presumed Seawater</i>	0	-175	135	1,011	17	989
Salinas River Exchange (AFY)	0	0	0	0	0	0
Overlying Unit Exchange (AFY)	0	1,899	1,840	798	2,768	7,305
Underlying Unit Exchange (AFY)	-1,900	-1,821	-791	-2,768	0	-7,280

CHANGE IN GROUNDWATER STORAGE	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
ANNUAL AVERAGE (AFY)	83	97	25	324	70	598
<i>50-YEAR CUMULATIVE (AF)</i>	<i>1,238</i>	<i>1,449</i>	<i>372</i>	<i>4,860</i>	<i>1,045</i>	<i>8,964</i>

Notes:

- (1) Marina/Ord Area WBZ includes the Reservation Road portion of the Corral de Tierra Management Area.
- (2) All values in acre-feet per year (AFY) unless otherwise noted.
- (3) Includes 287 AFY of pumping from the Reservation Road portion of the Corral de Tierra Management Area.

Abbreviations:

AF = acre-feet
 AFY = acre-feet per year
 DWR = California Department of Water Resources
 WBZ = Water Budget Zone
 WY = DWR Water Year (October - September)

TABLE 6A-I
AVERAGE ANNUAL PROJECTED GROUNDWATER BUDGET - MARINA/ORD AREA WATER BUDGET ZONE⁽¹⁾
Scenario: Baseline Climate, no projects, MO boundary conditions

NET ANNUAL GROUNDWATER FLOWS⁽²⁾	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
Recharge (AFY)	3,020	605	0	1,627	1,104	6,356
Well Pumping (AFY) ⁽³⁾	0	0	-2,752	-954	-5,060	-8,767
Net Cross-Boundary Flows (AFY)	-1,101	-439	660	3,348	-9	2,459
<i>Seaside Subbasin</i>	-16	-2	-2	1,873	-265	1,589
<i>180/400 Subbasin</i>	-364	-556	273	-84	-962	-1,694
<i>Corral de Tierra WBZ</i>	0	0	0	-189	1,187	998
<i>Ocean</i>	-721	119	390	1,748	31	1,567
<i>Presumed Freshwater</i>	-721	0	0	0	0	-721
<i>Presumed Seawater</i>	0	119	390	1,748	31	2,288
Salinas River Exchange (AFY)	0	0	0	0	0	0
Overlying Unit Exchange (AFY)	0	1,916	2,076	7	3,889	7,888
Underlying Unit Exchange (AFY)	-1,887	-2,029	24	-3,889	0	-7,781

CHANGE IN GROUNDWATER STORAGE	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
ANNUAL AVERAGE (AFY)	31	53	8	139	-76	156
50-YEAR CUMULATIVE (AF)	472	802	116	2,087	-1,142	2,334

Notes:

- (1) Marina/Ord Area WBZ includes the Reservation Road portion of the Corral de Tierra Management Area.
(2) All values in acre-feet per year (AFY) unless otherwise noted.
(3) Includes 287 AFY of pumping from the Reservation Road portion of the Corral de Tierra Management Area.

Abbreviations:

AF = acre-feet
AFY = acre-feet per year
DWR = California Department of Water Resources
MO = Measurable Objectives
WBZ = Water Budget Zone
WY = DWR Water Year (October - September)

TABLE 6A-J

DRAFT

AVERAGE ANNUAL PROJECTED GROUNDWATER BUDGET - MARINA/ORD AREA WATER BUDGET ZONE⁽¹⁾

Scenario: Baseline Climate, with projects, MO boundary conditions

NET ANNUAL GROUNDWATER FLOWS⁽²⁾	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
Recharge (AFY)	3,020	605	0	1,627	1,104	6,356
Well Pumping (AFY) ⁽³⁾	0	0	-1,364	-476	-2,648	-4,488
Net Cross-Boundary Flows (AFY)	-1,118	-576	-250	810	-489	-1,623
Seaside Subbasin	-18	-2	-3	1,283	-420	840
180/400 Subbasin	-366	-656	-563	-1,813	-1,271	-4,668
Corral de Tierra WBZ	0	0	0	-202	1,174	972
Ocean	-734	82	315	1,542	27	1,233
Presumed Freshwater	-734	0	0	0	0	-734
Presumed Seawater	0	82	315	1,542	27	1,966
Salinas River Exchange (AFY)	0	0	0	0	0	0
Overlying Unit Exchange (AFY)	0	1,893	1,825	192	1,979	5,889
Underlying Unit Exchange (AFY)	-1,867	-1,863	-198	-1,979	0	-5,908
CHANGE IN GROUNDWATER STORAGE	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
ANNUAL AVERAGE (AFY)	35	58	14	174	-54	226
50-YEAR CUMULATIVE (AF)	523	873	204	2,609	-816	3,393

Notes:

- (1) Marina/Ord Area WBZ includes the Reservation Road portion of the Corral de Tierra Management Area.
(2) All values in acre-feet per year (AFY) unless otherwise noted.
(3) Includes 287 AFY of pumping from the Reservation Road portion of the Corral de Tierra Management Area.

Abbreviations:

AF = acre-feet
AFY = acre-feet per year
DWR = California Department of Water Resources
MO = Measurable Objectives
WBZ = Water Budget Zone
WY = DWR Water Year (October - September)

TABLE 6A-K

DRAFT

AVERAGE ANNUAL PROJECTED GROUNDWATER BUDGET - MARINA/ORD AREA WATER BUDGET ZONE⁽¹⁾

Scenario: 2070 Climate, no projects, MO boundary conditions

NET ANNUAL GROUNDWATER FLOWS⁽²⁾	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
Recharge (AFY)	3,606	710	0	1,932	1,261	7,509
Well Pumping (AFY) ⁽³⁾	0	0	-2,752	-954	-5,060	-8,767
Net Cross-Boundary Flows (AFY)	-1,293	-537	633	2,908	-191	1,521
<i>Seaside Subbasin</i>	-25	-3	-3	1,576	-512	1,033
<i>180/400 Subbasin</i>	-464	-677	199	-363	-1,001	-2,306
<i>Corral de Tierra WBZ</i>	0	0	0	-225	1,289	1,063
<i>Ocean</i>	-804	143	437	1,920	34	1,730
<i>Presumed Freshwater</i>	-804	0	0	0	0	-804
<i>Presumed Seawater</i>	0	143	437	1,920	34	2,534
Salinas River Exchange (AFY)	0	0	0	0	0	0
Overlying Unit Exchange (AFY)	0	2,199	2,353	254	3,986	8,792
Underlying Unit Exchange (AFY)	-2,192	-2,312	-225	-3,986	0	-8,714
CHANGE IN GROUNDWATER STORAGE	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
ANNUAL AVERAGE (AFY)	122	61	9	154	-4	341
50-YEAR CUMULATIVE (AF)	1,823	916	134	2,306	-62	5,117

Notes:

- (1) Marina/Ord Area WBZ includes the Reservation Road portion of the Corral de Tierra Management Area.
(2) All values in acre-feet per year (AFY) unless otherwise noted.
(3) Includes 287 AFY of pumping from the Reservation Road portion of the Corral de Tierra Management Area.

Abbreviations:

AF = acre-feet
AFY = acre-feet per year
DWR = California Department of Water Resources
MO = Measurable Objectives
WBZ = Water Budget Zone
WY = DWR Water Year (October - September)

TABLE 6A-L
AVERAGE ANNUAL PROJECTED GROUNDWATER BUDGET - MARINA/ORD AREA WATER BUDGET ZONE⁽¹⁾
Scenario: 2070 Climate, with projects, MO boundary conditions

NET ANNUAL GROUNDWATER FLOWS⁽²⁾	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
Recharge (AFY)	3,606	710	0	1,932	1,261	7,509
Well Pumping (AFY) ⁽³⁾	0	0	-1,364	-476	-2,648	-4,488
Net Cross-Boundary Flows (AFY)	-1,310	-675	-277	371	-671	-2,562
<i>Seaside Subbasin</i>	-27	-3	-4	985	-668	283
<i>180/400 Subbasin</i>	-466	-777	-636	-2,091	-1,309	-5,279
<i>Corral de Tierra WBZ</i>	0	0	0	-238	1,276	1,038
<i>Ocean</i>	-817	106	363	1,714	30	1,396
<i>Presumed Freshwater</i>	-817	0	0	0	0	-817
<i>Presumed Seawater</i>	0	106	363	1,714	30	2,213
Salinas River Exchange (AFY)	0	0	0	0	0	0
Overlying Unit Exchange (AFY)	0	2,176	2,101	437	2,075	6,790
Underlying Unit Exchange (AFY)	-2,171	-2,145	-446	-2,075	0	-6,837

CHANGE IN GROUNDWATER STORAGE	Dune Sand	Upper 180-Foot	Lower 180-Foot	400-Foot	Deep	TOTAL
ANNUAL AVERAGE (AFY)	125	66	15	188	17	411
50-YEAR CUMULATIVE (AF)	1,876	987	221	2,827	262	6,172

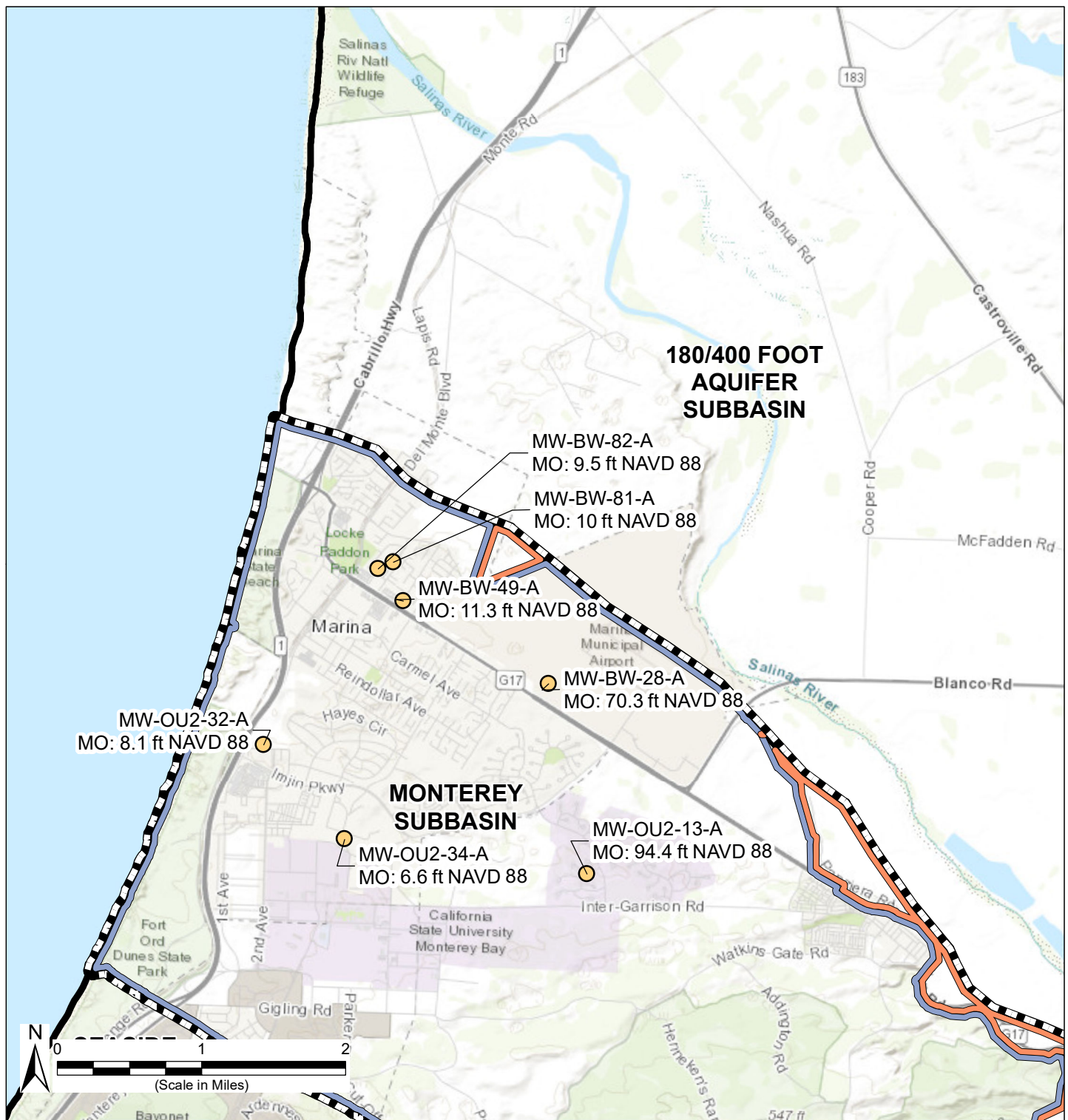
Notes:

- (1) Marina/Ord Area WBZ includes the Reservation Road portion of the Corral de Tierra Management Area.
(2) All values in acre-feet per year (AFY) unless otherwise noted.
(3) Includes 287 AFY of pumping from the Reservation Road portion of the Corral de Tierra Management Area.

Abbreviations:

AF = acre-feet
AFY = acre-feet per year
DWR = California Department of Water Resources
MO = Measurable Objectives
WBZ = Water Budget Zone
WY = DWR Water Year (October - September)

Appendix 8A
Groundwater Elevation SMCs



Legend

- Monterey Subbasin
- Other Groundwater Subbasins within Salinas Valley Basin
- Representative Monitoring Sites for Groundwater Elevations

Management Areas

- Marina-Ord Area
- Corral de Tierra

Abbreviations

MO = Measurable Objectives

Notes

1. All locations are approximate.

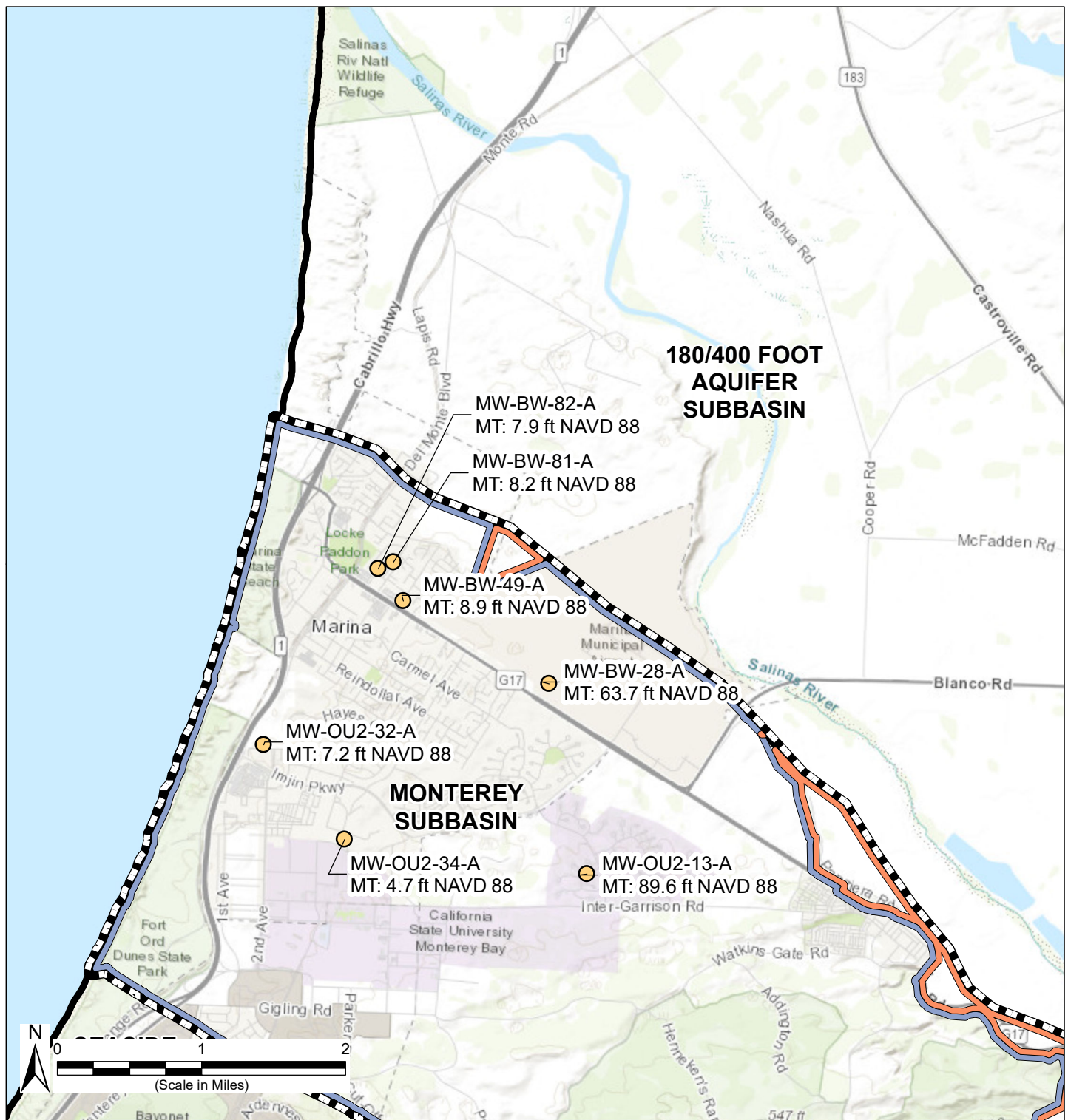
Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 30 April 2021.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2018 Update.

Groundwater Elevation Measurable Objectives Dune Sand Aquifer

Monterey Subbasin
Groundwater Sustainability Plan
April 2021

Figure 8A-1



Legend

- Monterey Subbasin
- Other Groundwater Subbasins within Salinas Valley Basin
- Representative Monitoring Sites for Groundwater Elevations

Management Areas

- Marina-Ord Area
- Corral de Tierra

Abbreviations

MT = Minimum Thresholds

Notes

1. All locations are approximate.

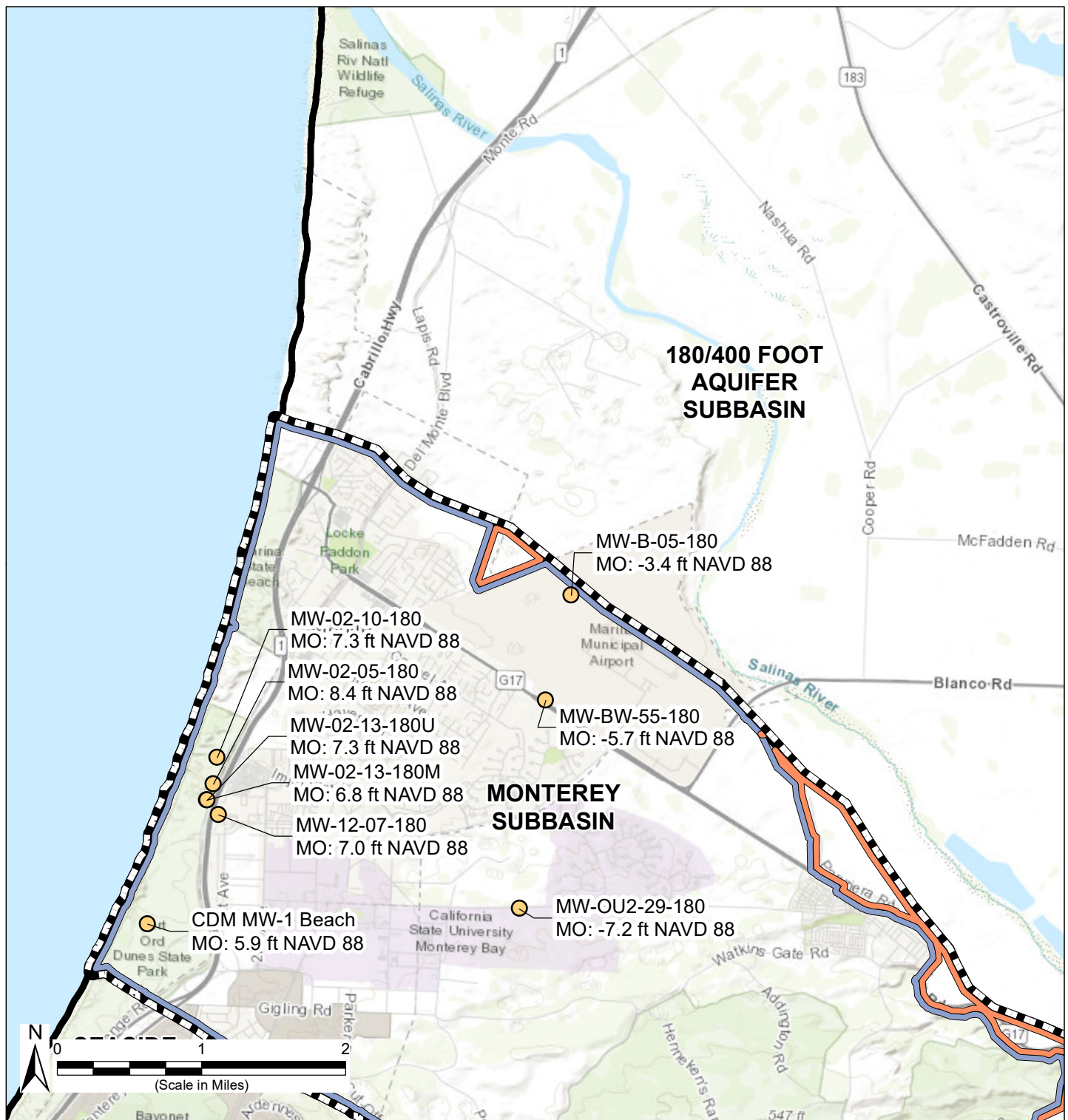
Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 30 April 2021.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2018 Update.

Groundwater Elevation Minimum Thresholds Dune Sand Aquifer

Monterey Subbasin
Groundwater Sustainability Plan
April 2021

Figure 8A-2



Path: X:\B60094\Maps\202104\Fig8B-3_Upper180-ft_MO.mxd

Legend

- Monterey Subbasin
- Other Groundwater Subbasins within Salinas Valley Basin
- Representative Monitoring Sites for Groundwater Elevations

Management Areas

- Marina-Ord Area
- Corral de Tierra Area

Abbreviations

MO = Measurable Objectives

Notes

- All locations are approximate.

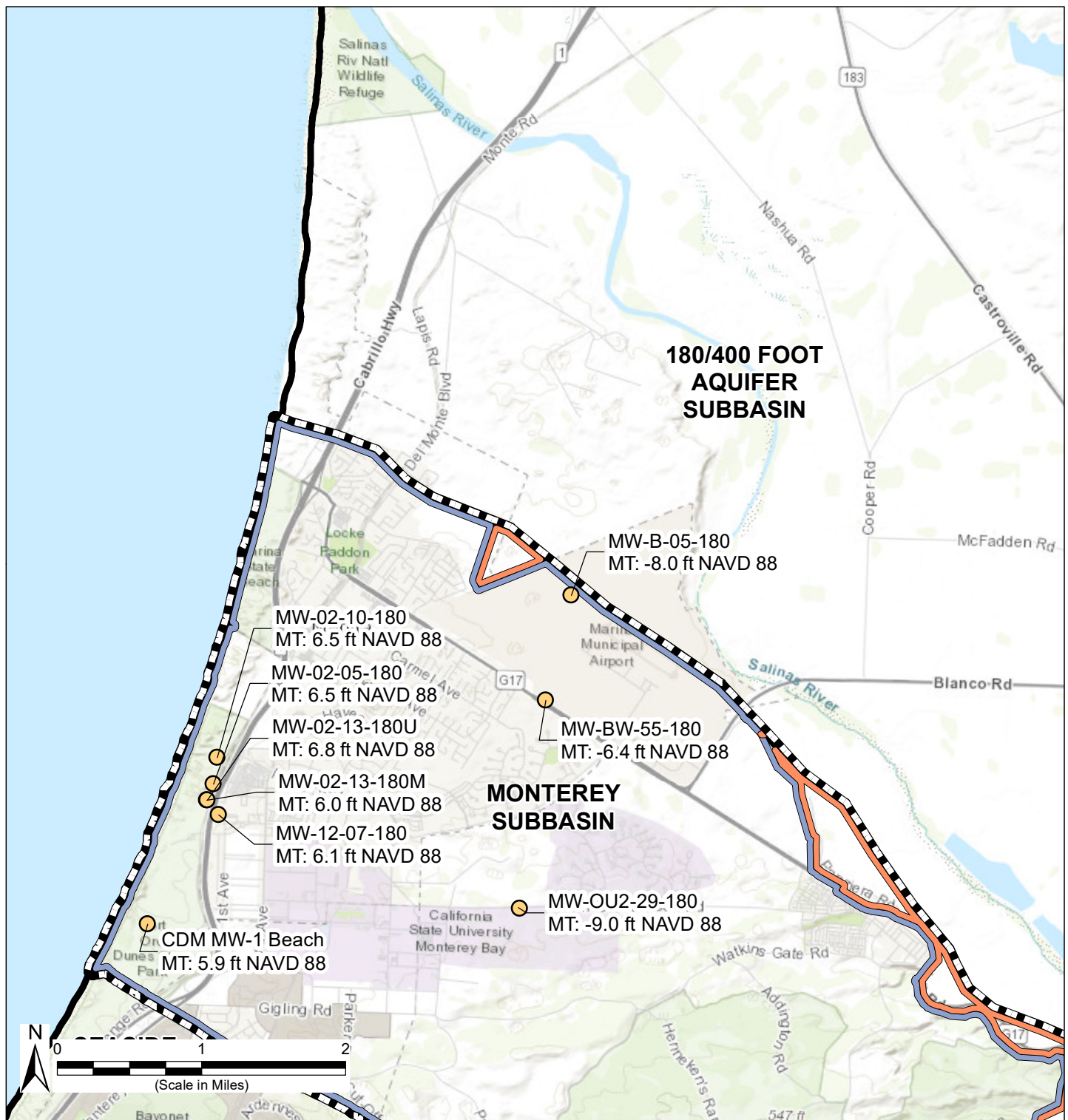
Sources

- Basemap is ESRI's ArcGIS Online world topographic map, obtained 30 April 2021.
- DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2018 Update.

Groundwater Elevation Measurable Objectives Upper 180-Footer Aquifer

Monterey Subbasin
Groundwater Sustainability Plan
April 2021

Figure 8A-3



Legend



Monterey Subbasin



Other Groundwater Subbasins within Salinas Valley Basin



Representative Monitoring Sites for Groundwater Elevations

Management Areas



Marina-Ord Area



Corral de Tierra

Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 30 April 2021.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2018 Update.

Groundwater Elevation Minimum Thresholds Upper 180-Foot Aquifer

Monterey Subbasin
Groundwater Sustainability Plan
April 2021

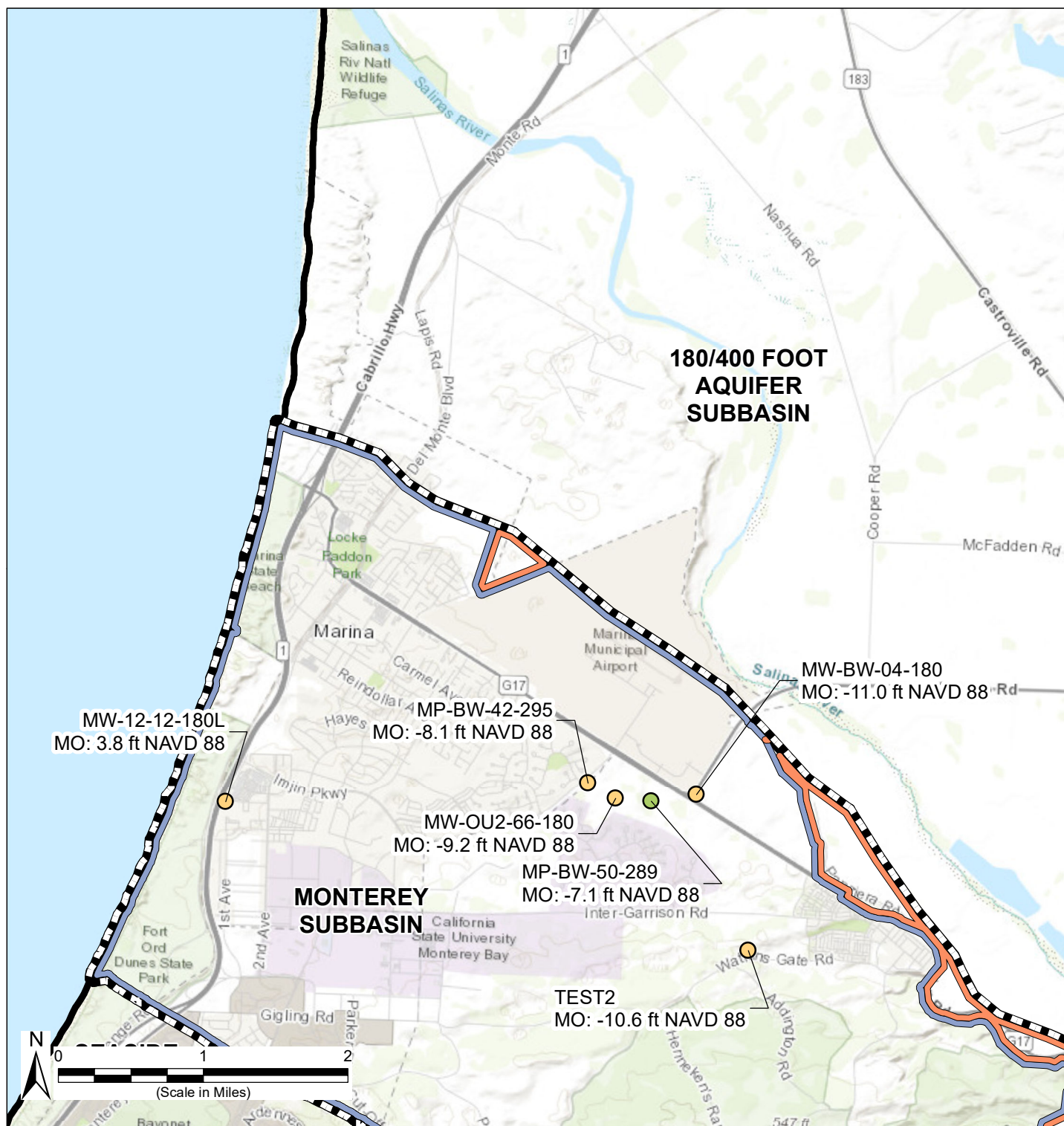
Figure 8A-4

Abbreviations

MT = Minimum Thresholds

Notes

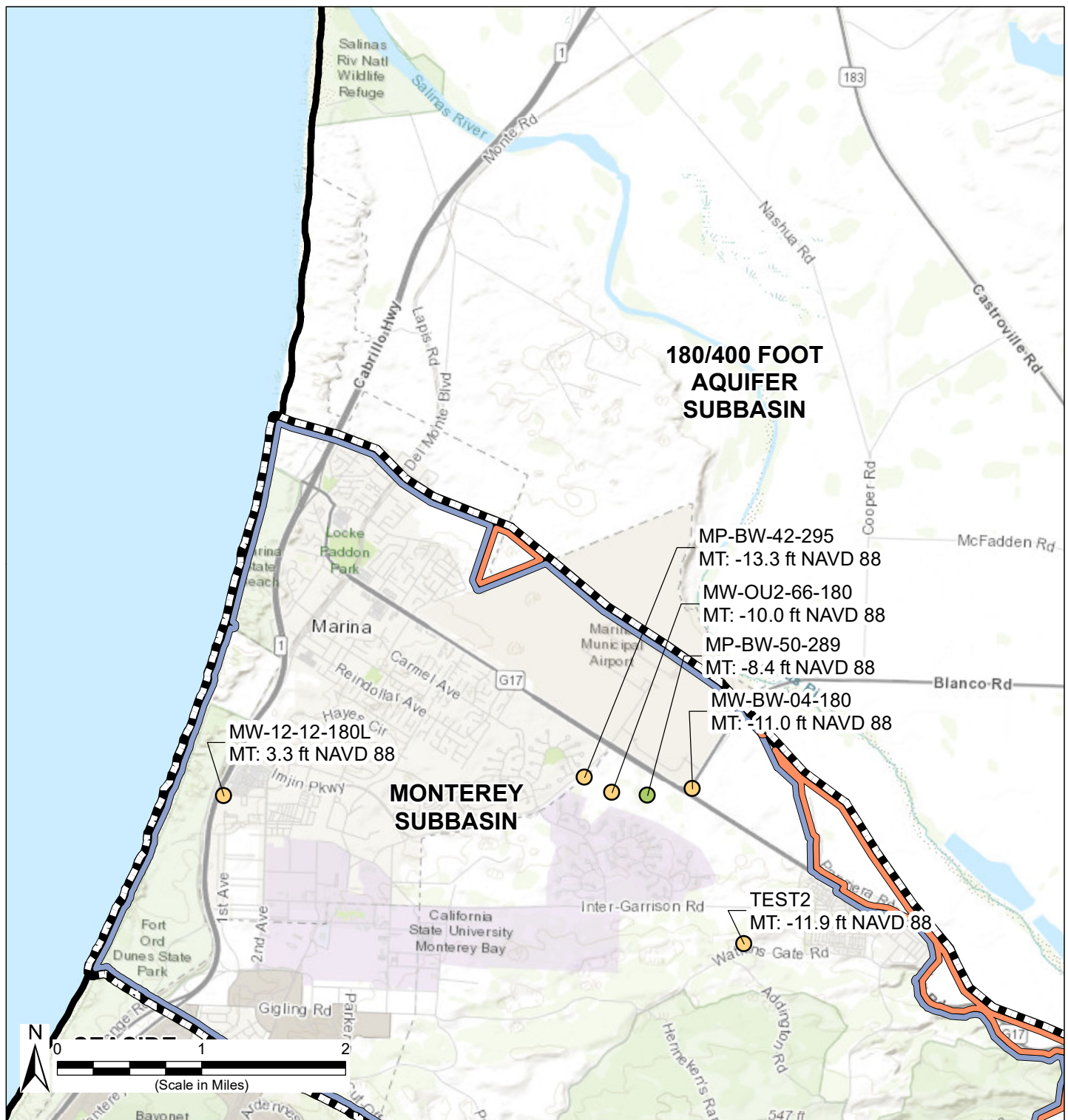
1. All locations are approximate.



Groundwater Elevation Measurable Objectives Lower 180-Foot Aquifer

Monterey Subbasin
Groundwater Sustainability Plan
April 2021

Figure 8A-5



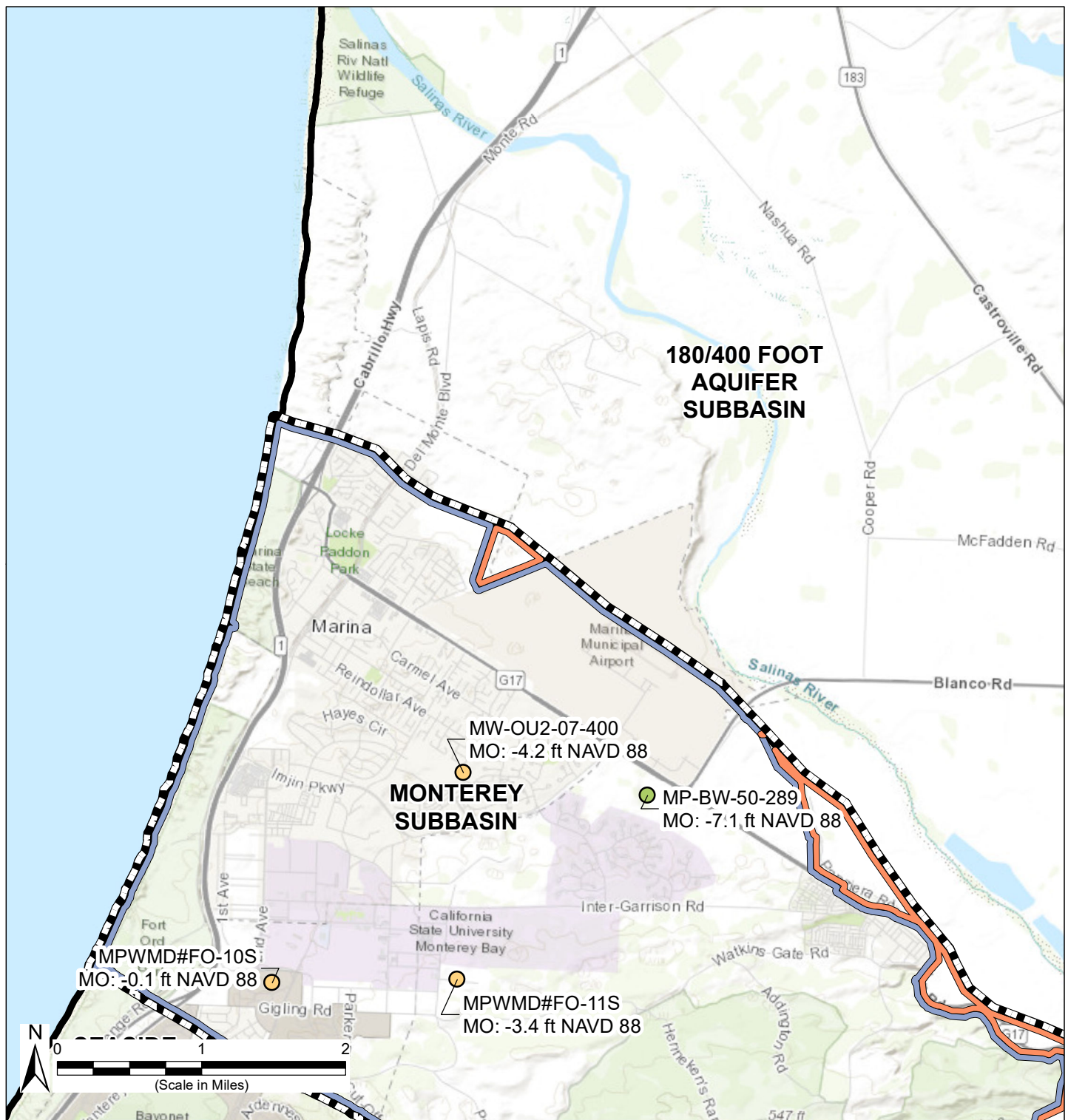
Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 30 April 2021.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2018 Update.

Groundwater Elevation Minimum Thresholds Lower 180-Foot Aquifer

Monterey Subbasin
Groundwater Sustainability Plan
April 2021

Figure 8A-6



Legend



Monterey Subbasin



Other Groundwater Subbasins within Salinas Valley Basin

Representative Monitoring Sites for Groundwater Elevations



400-Foot Aquifer (Paso Robles Aquifer)



Lower 180-Foot, 400-Foot

Abbreviations

MO = Measurable Objectives

Notes

1. All locations are approximate.

Management Areas

Marina-Ord

Corral de Tierra

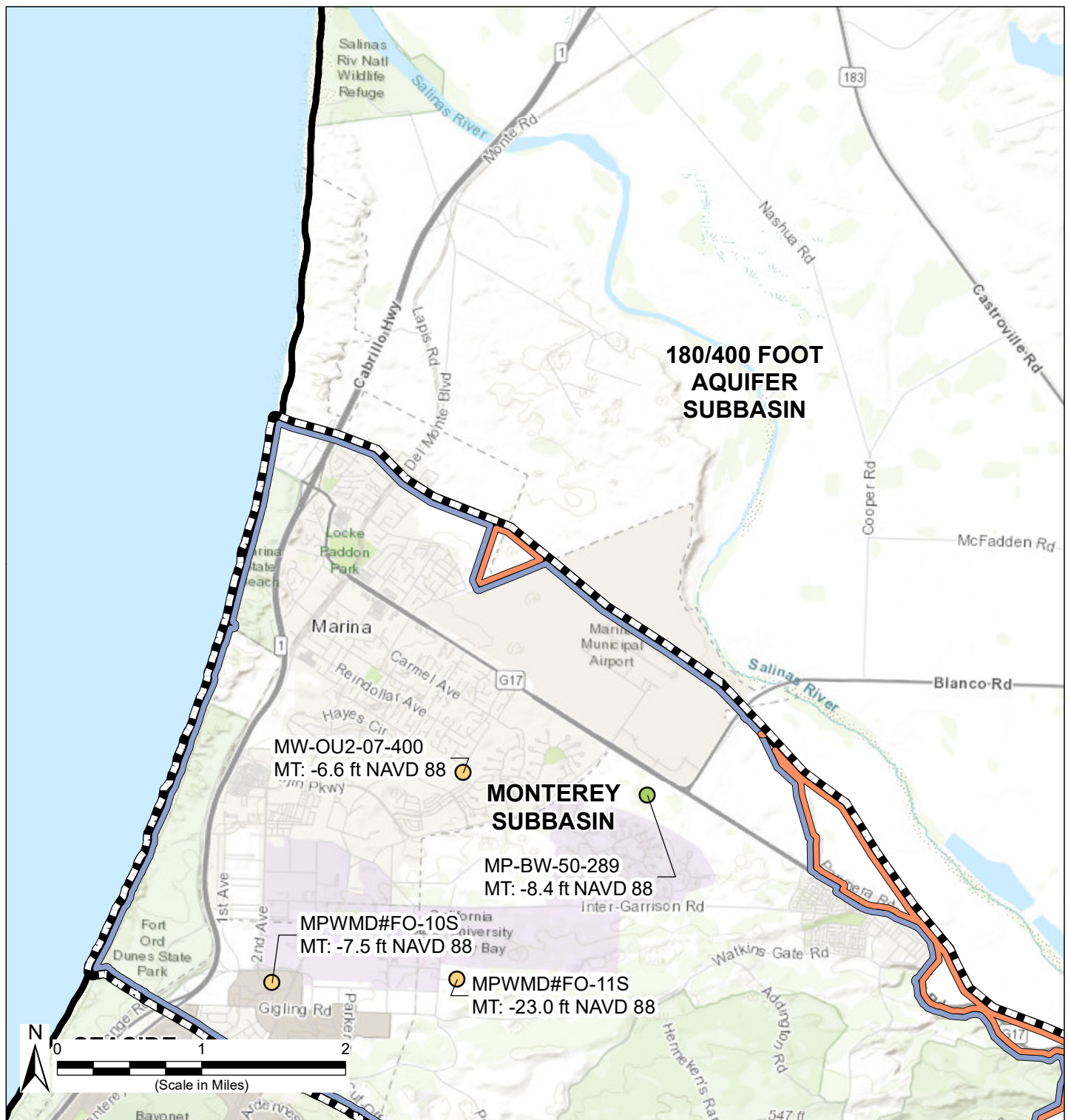
Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 30 April 2021.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2018 Update.

Groundwater Elevation Measurable Objectives 400-Foot Aquifer

Monterey Subbasin
Groundwater Sustainability Plan
April 2021

Figure 8A-7



Legend



Monterey Subbasin



Other Groundwater Subbasins within Salinas Valley Basin

Representative Monitoring Sites for Groundwater Elevations



400-Foot Aquifer (Paso Robles Aquifer)



Lower 180-Foot, 400-Foot

Abbreviations

MT = Minimum Thresholds

Notes

1. All locations are approximate.

Management Areas

Marina-Ord

Corral de Tierra

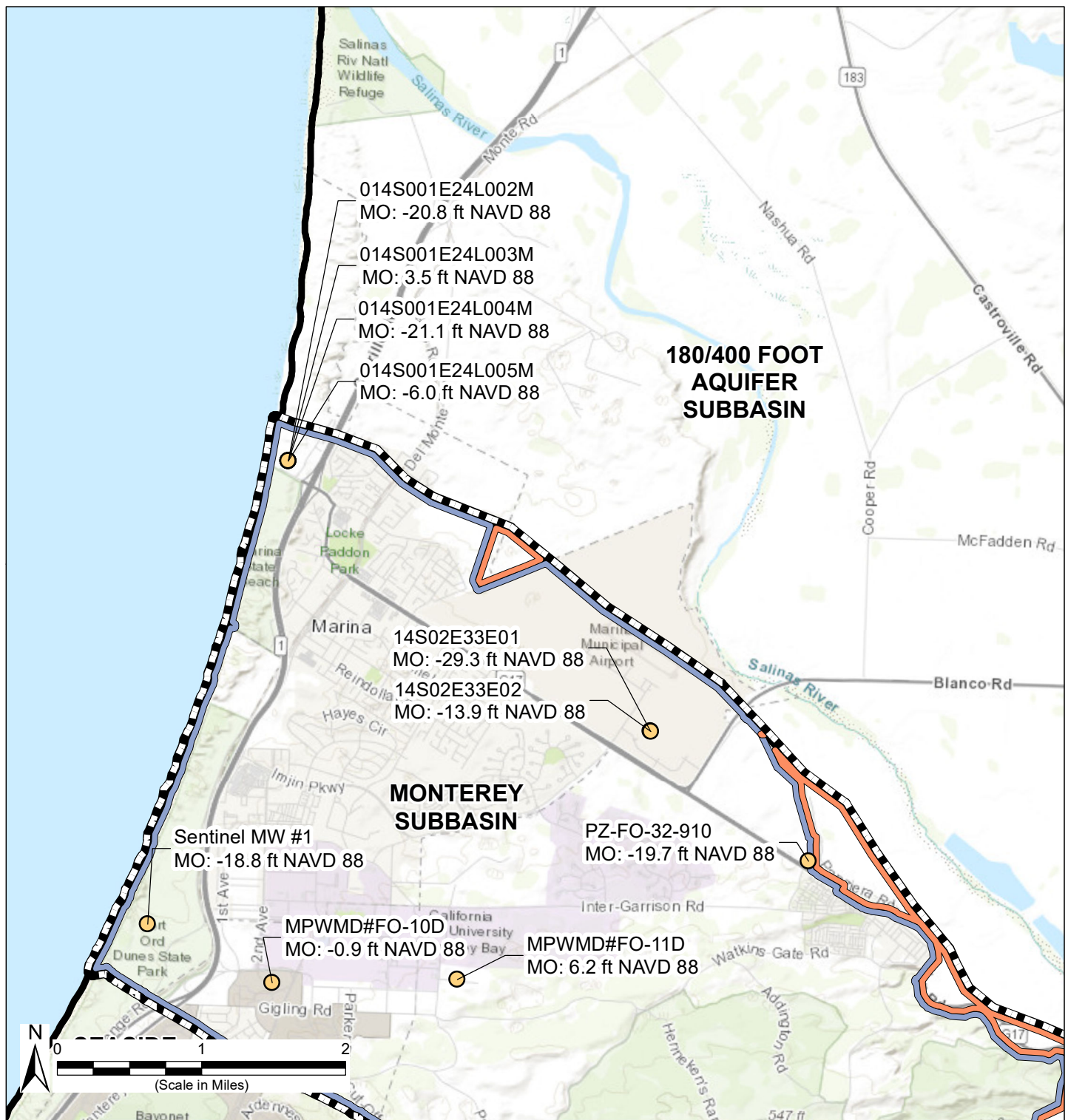
Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 30 April 2021.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2018 Update.

Groundwater Elevation Minimum Thresholds 400-Foot Aquifer

Monterey Subbasin
Groundwater Sustainability Plan
April 2021

Figure 8A-8



Legend

- Monterey Subbasin
- Other Groundwater Subbasins within Salinas Valley Basin
- Representative Monitoring Sites for Groundwater Elevations

Management Areas

- Marina-Ord Area
- Corral de Tierra

Abbreviations

MO = Measurable Objectives

Notes

1. All locations are approximate.

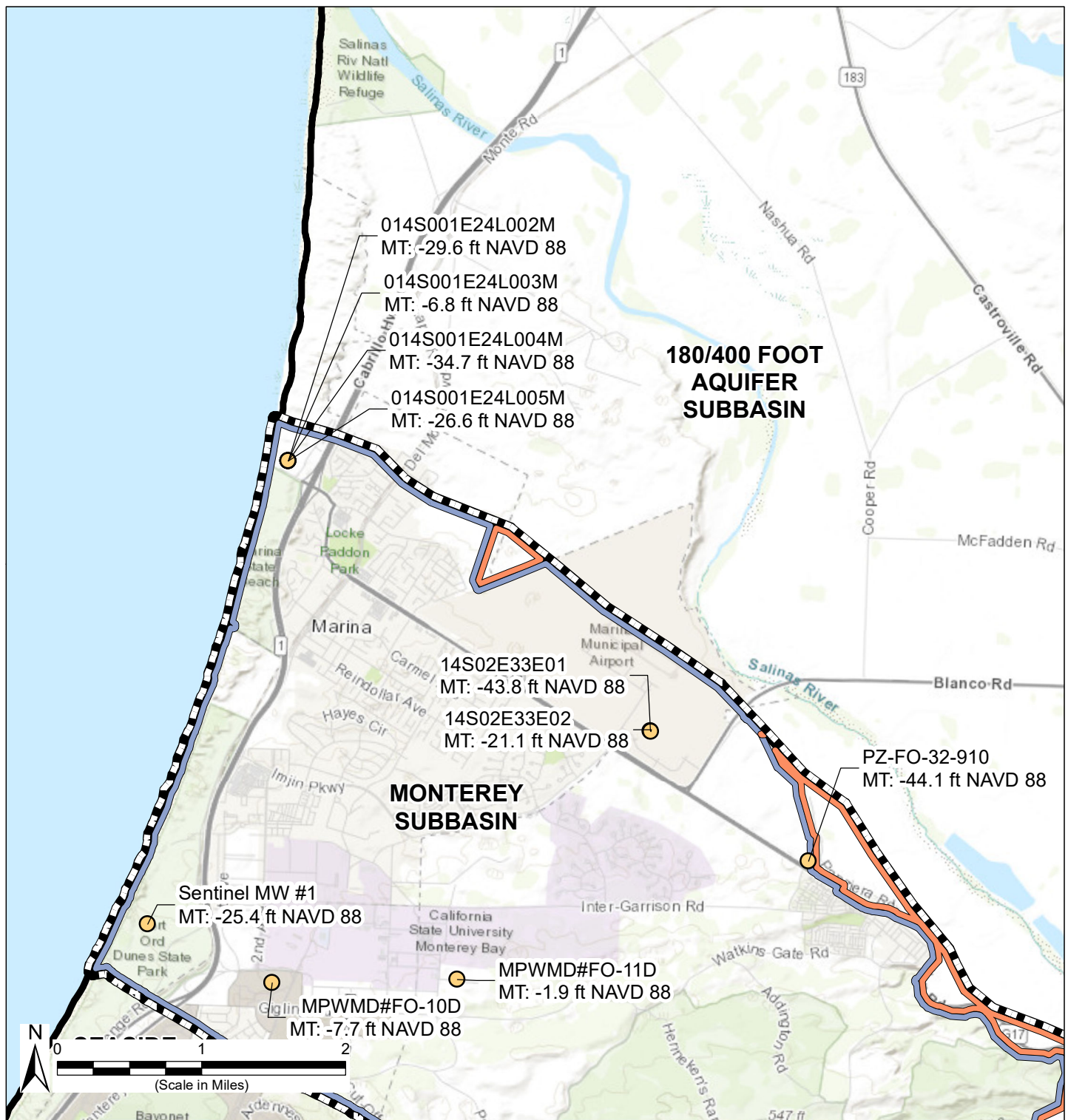
Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 30 April 2021.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2018 Update.

Groundwater Elevation Measurable Objectives Deep Aquifers

Monterey Subbasin
Groundwater Sustainability Plan
April 2021

Figure 8A-9



Legend

- Monterey Subbasin
- Other Groundwater Subbasins within Salinas Valley Basin
- Representative Monitoring Sites for Groundwater Elevations

Management

- Marina-Ord
- Corral de Tierra

Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 30 April 2021.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2018 Update.

Abbreviations

MT = Minimum Thresholds

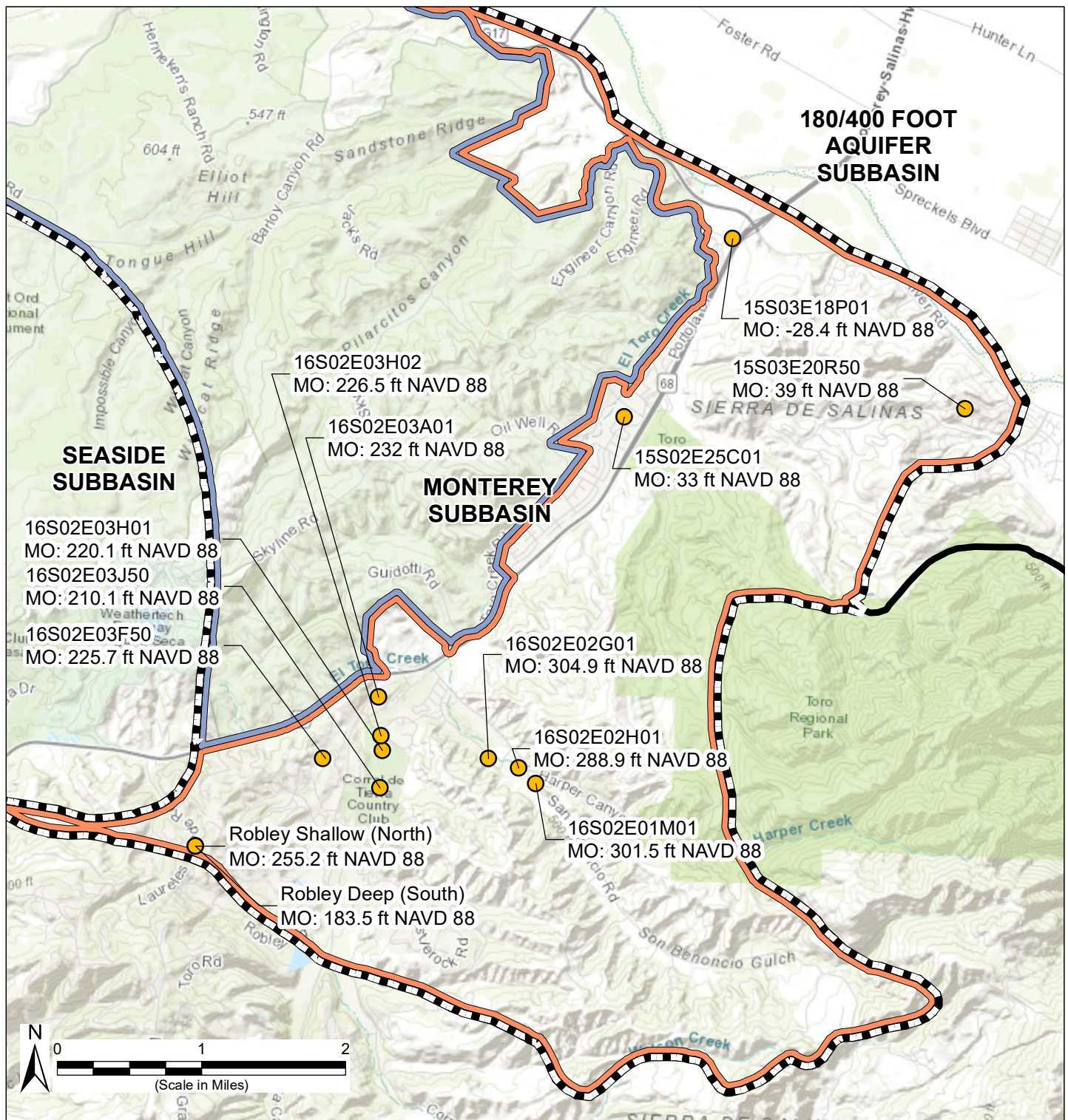
Notes

1. All locations are approximate.

Groundwater Elevation Minimum Thresholds Deep Aquifers

Monterey Subbasin
Groundwater Sustainability Plan
April 2021

Figure 8A-10



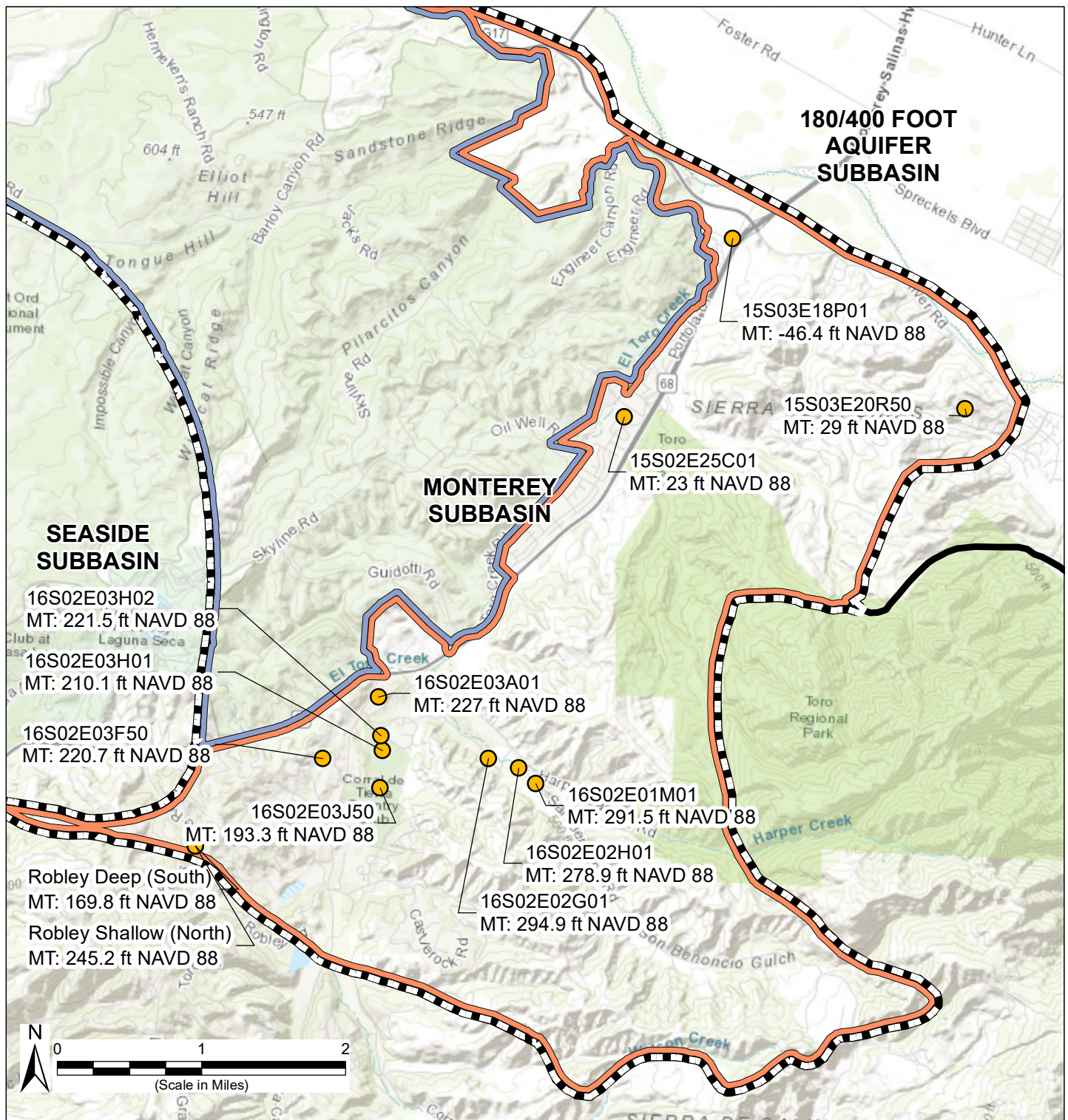
Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 24 June 2021.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2018 Update.

Groundwater Elevation Measurable Objectives El Toro Primary Aquifer

Monterey Subbasin
Groundwater Sustainability Plan
June 2021

Figure 8A-11



Legend

- Monterey Subbasin
- Other Groundwater Subbasins within Salinas Valley Basin
- Representative Monitoring Sites for Groundwater Elevations

Management Areas

- Marina-Ord Area
- Corral de Tierra Area

Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 24 June 2021.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2018 Update.

Abbreviations

MT = Minimum Thresholds

Notes

1. All locations are approximate.

Groundwater Elevation Minimum Thresholds El Toro Primary Aquifer

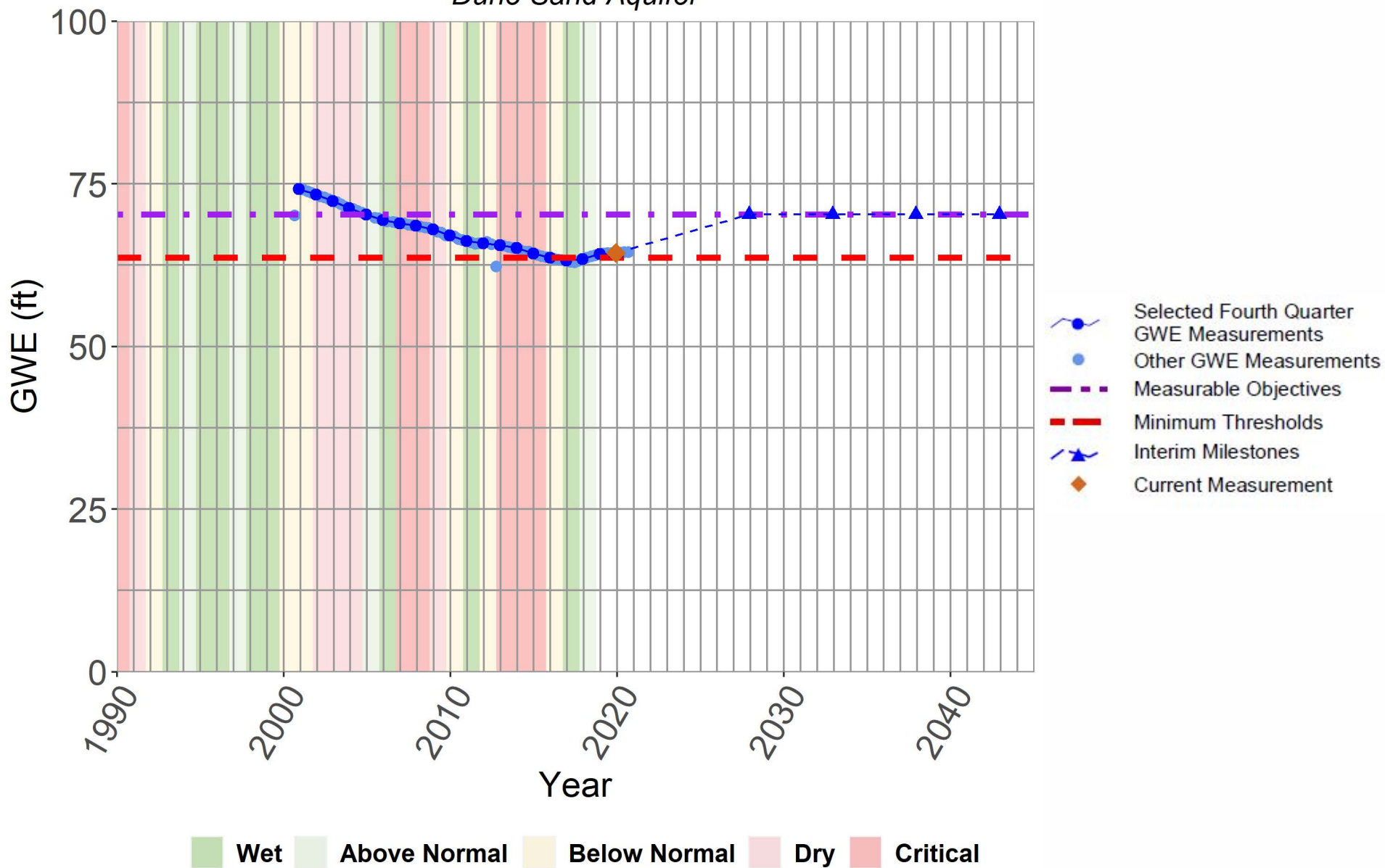
Monterey Subbasin
Groundwater Sustainability Plan
June 2021

Figure 8A-12

Appendix 8B
Groundwater Elevation Interim Milestones

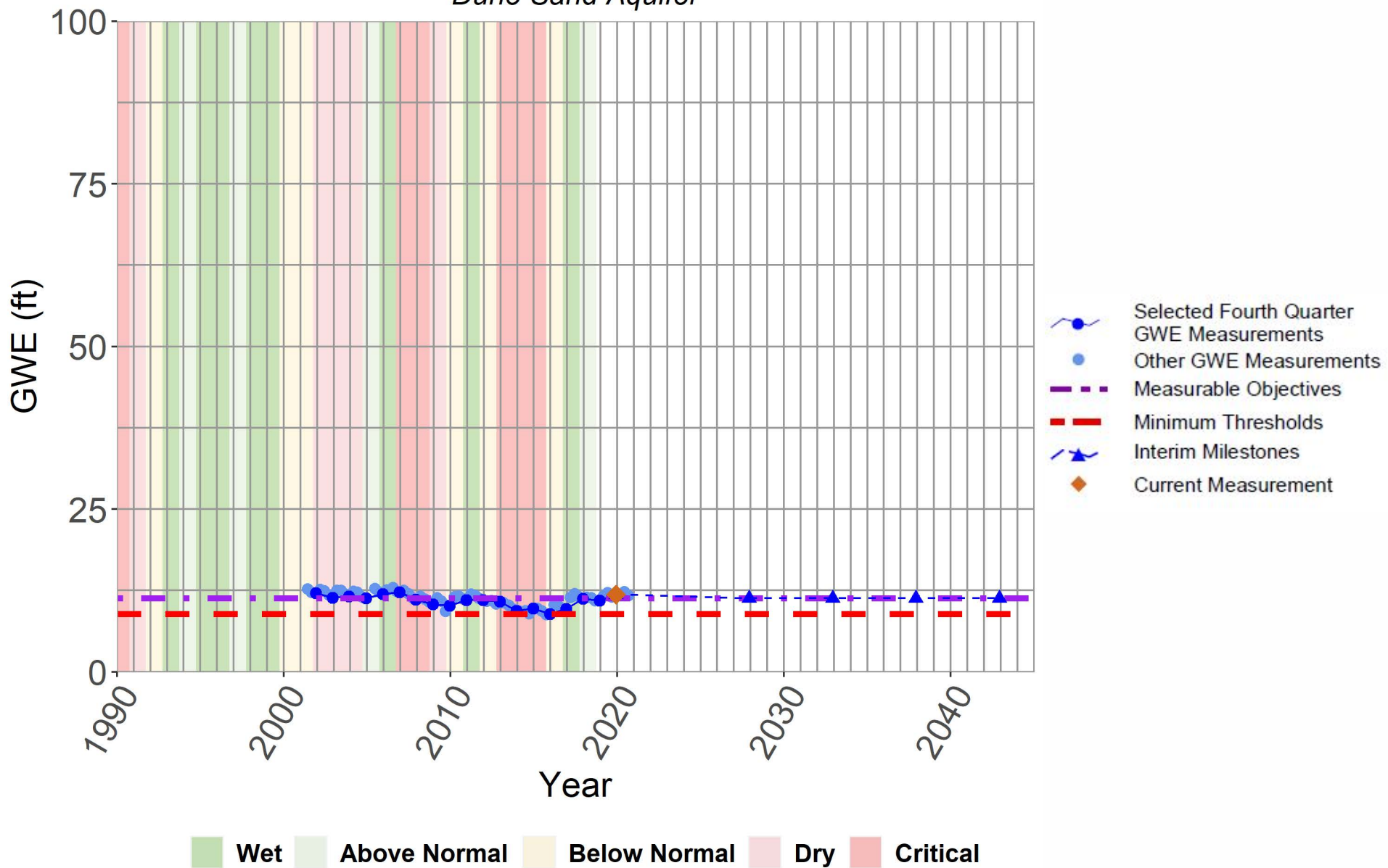
MW-BW-28-A

Dune Sand Aquifer



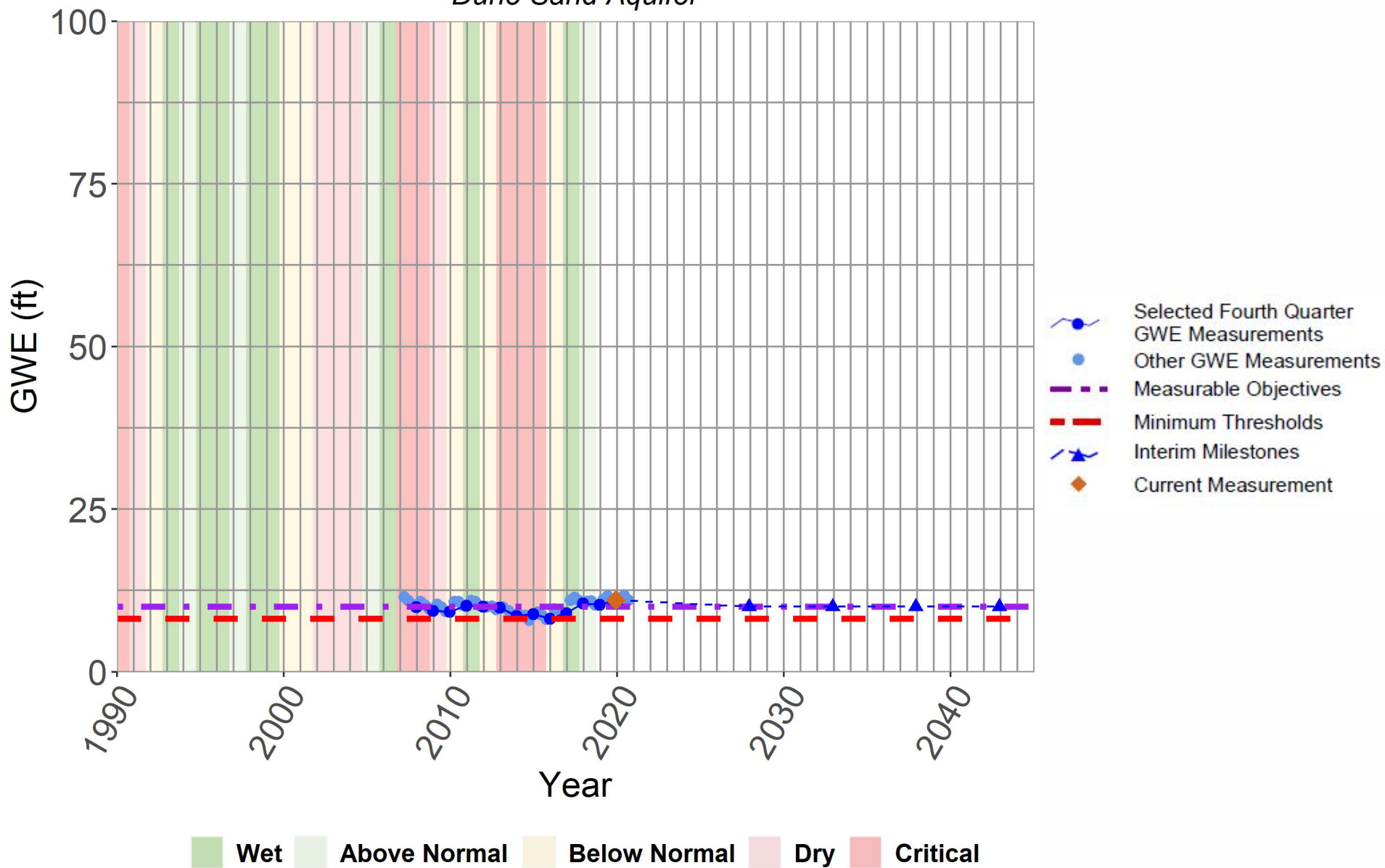
MW-BW-49-A

Dune Sand Aquifer



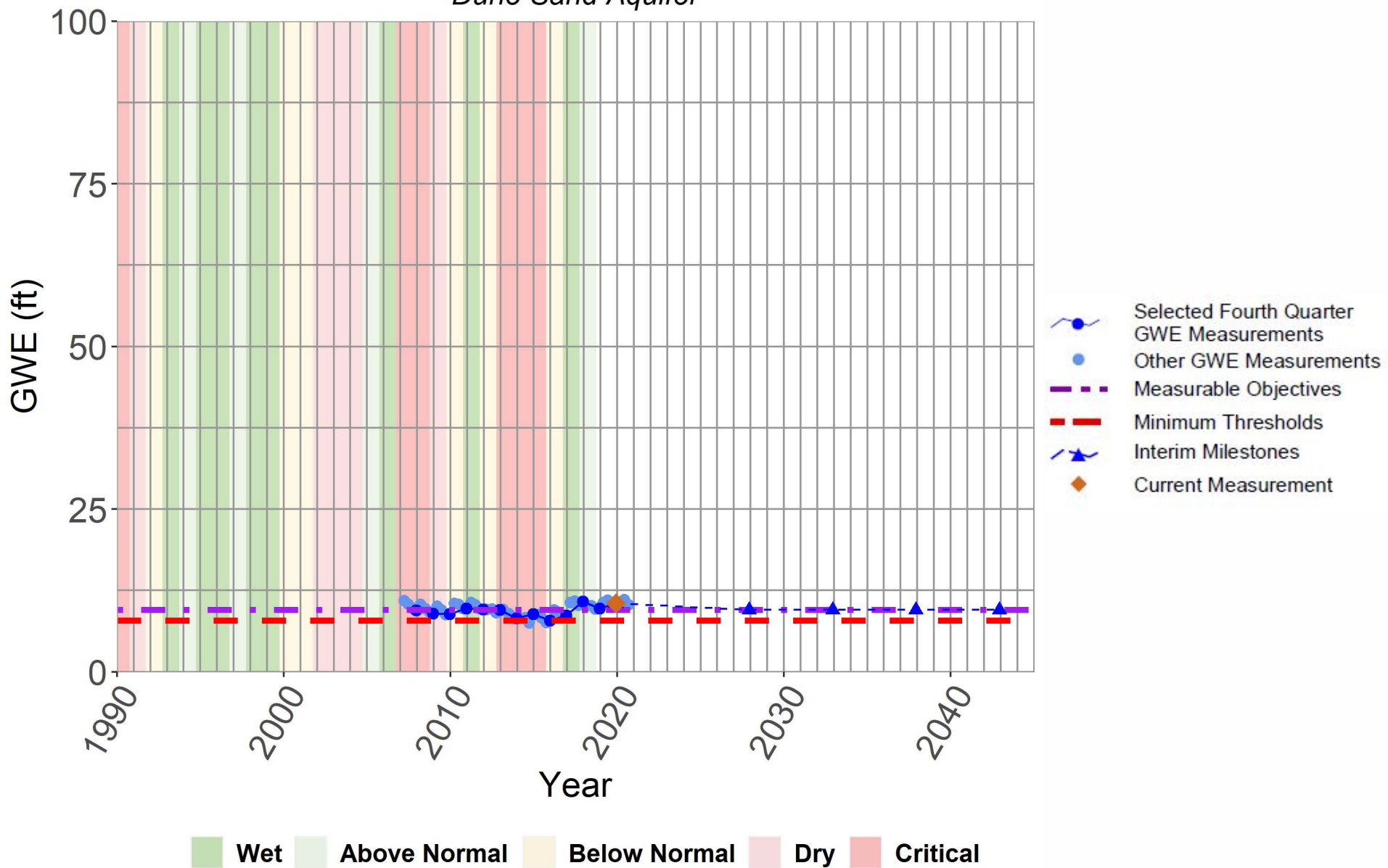
MW-BW-81-A

Dune Sand Aquifer



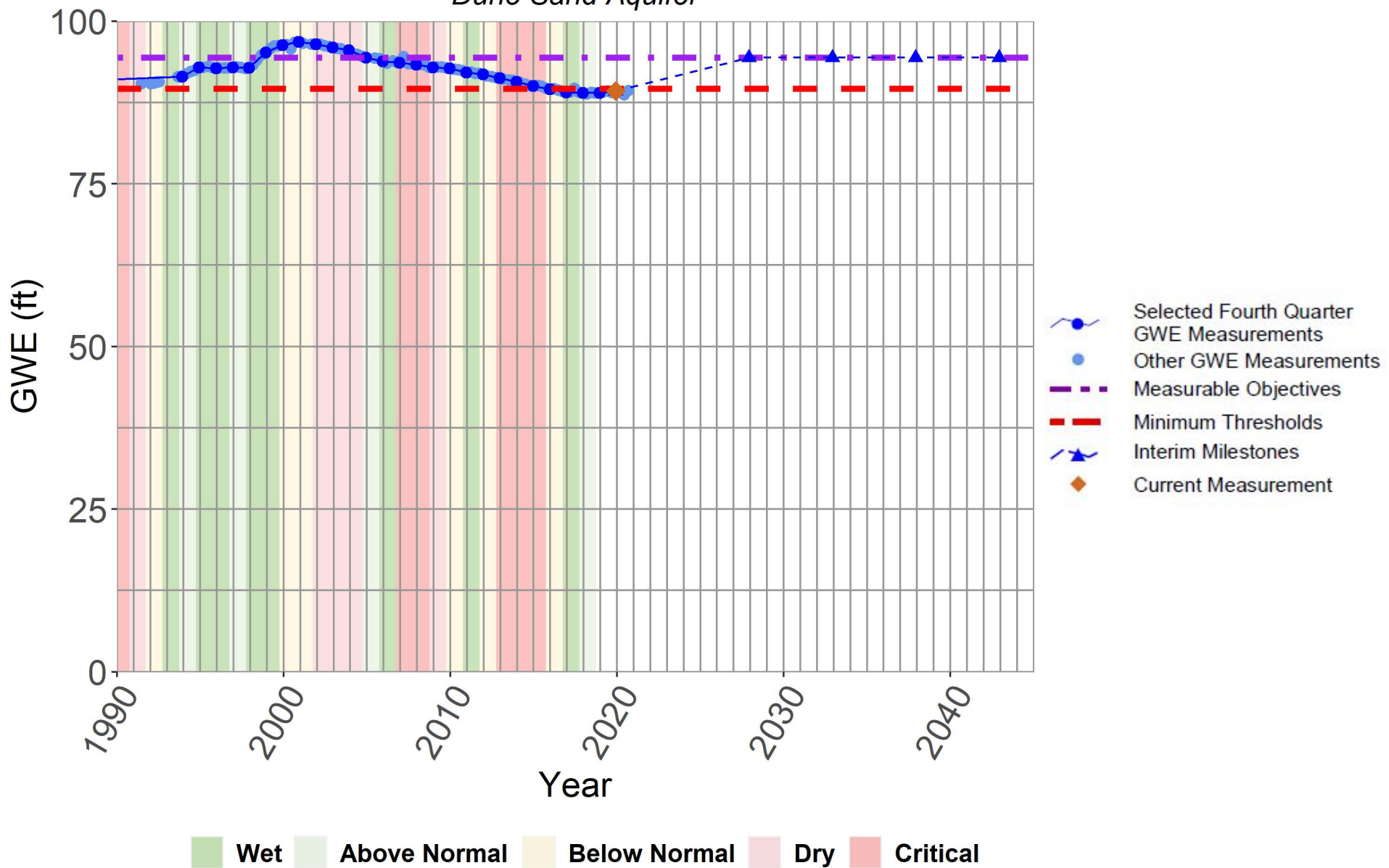
MW-BW-82-A

Dune Sand Aquifer



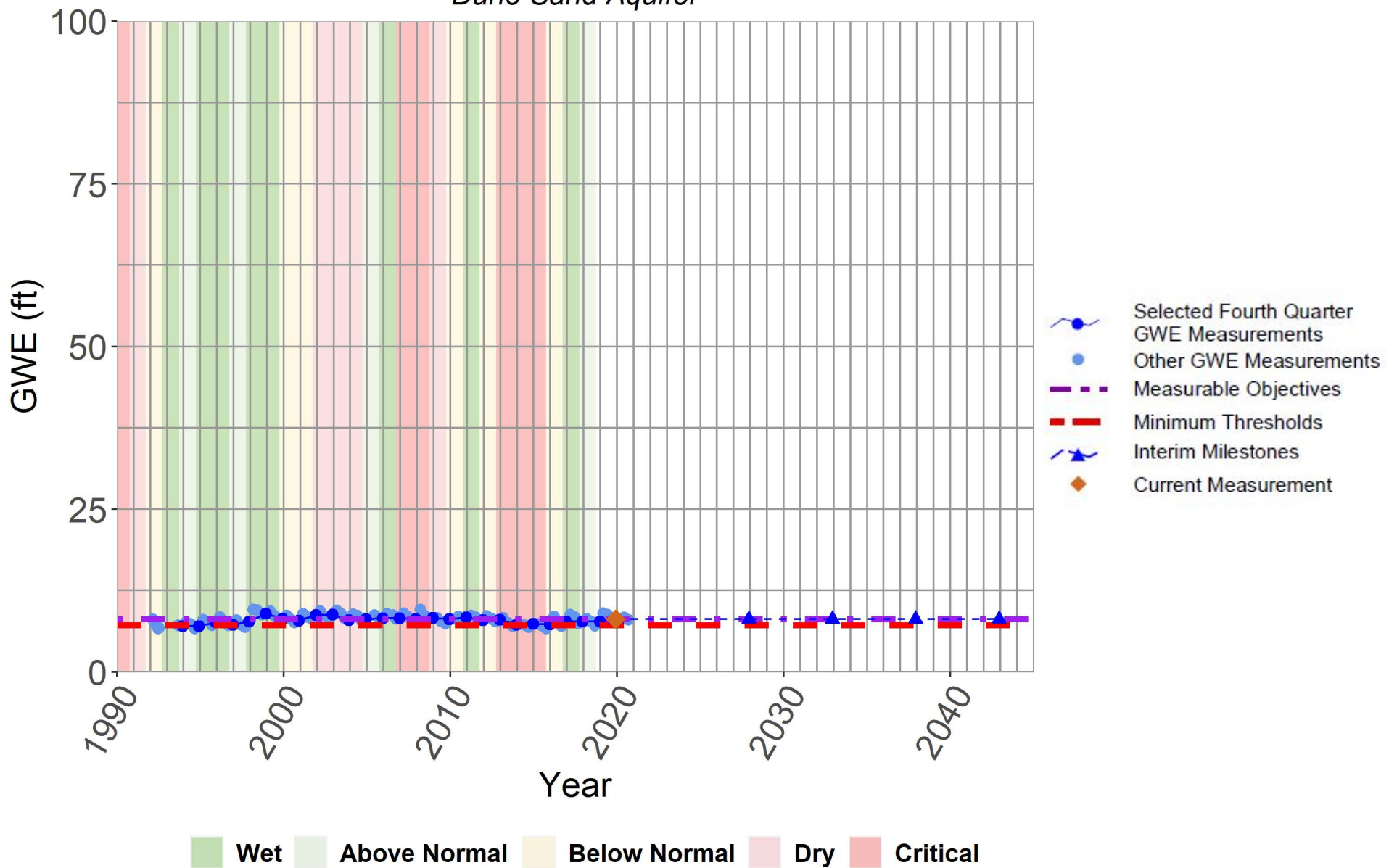
MW-OU2-13-A

Dune Sand Aquifer



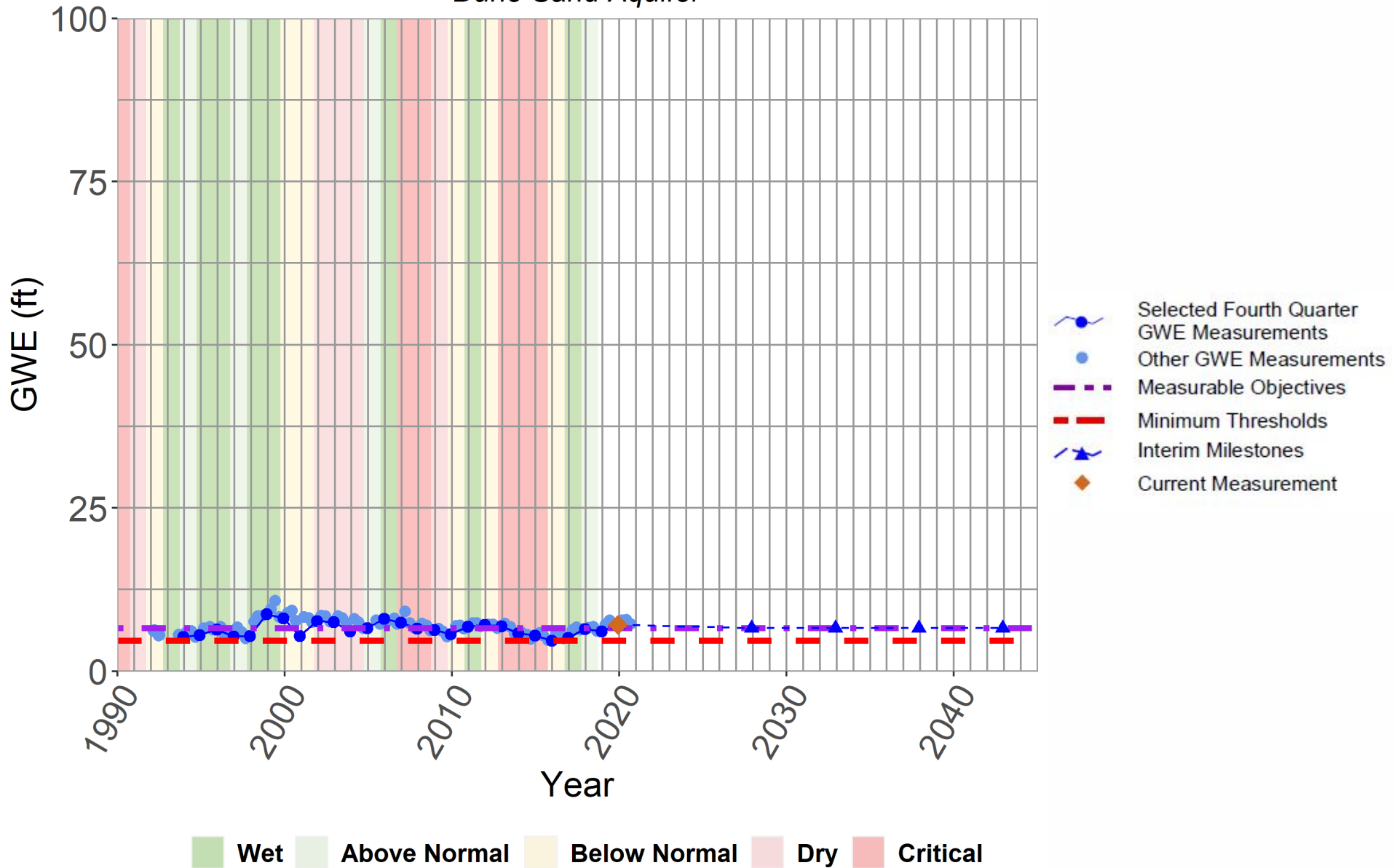
MW-OU2-32-A

Dune Sand Aquifer



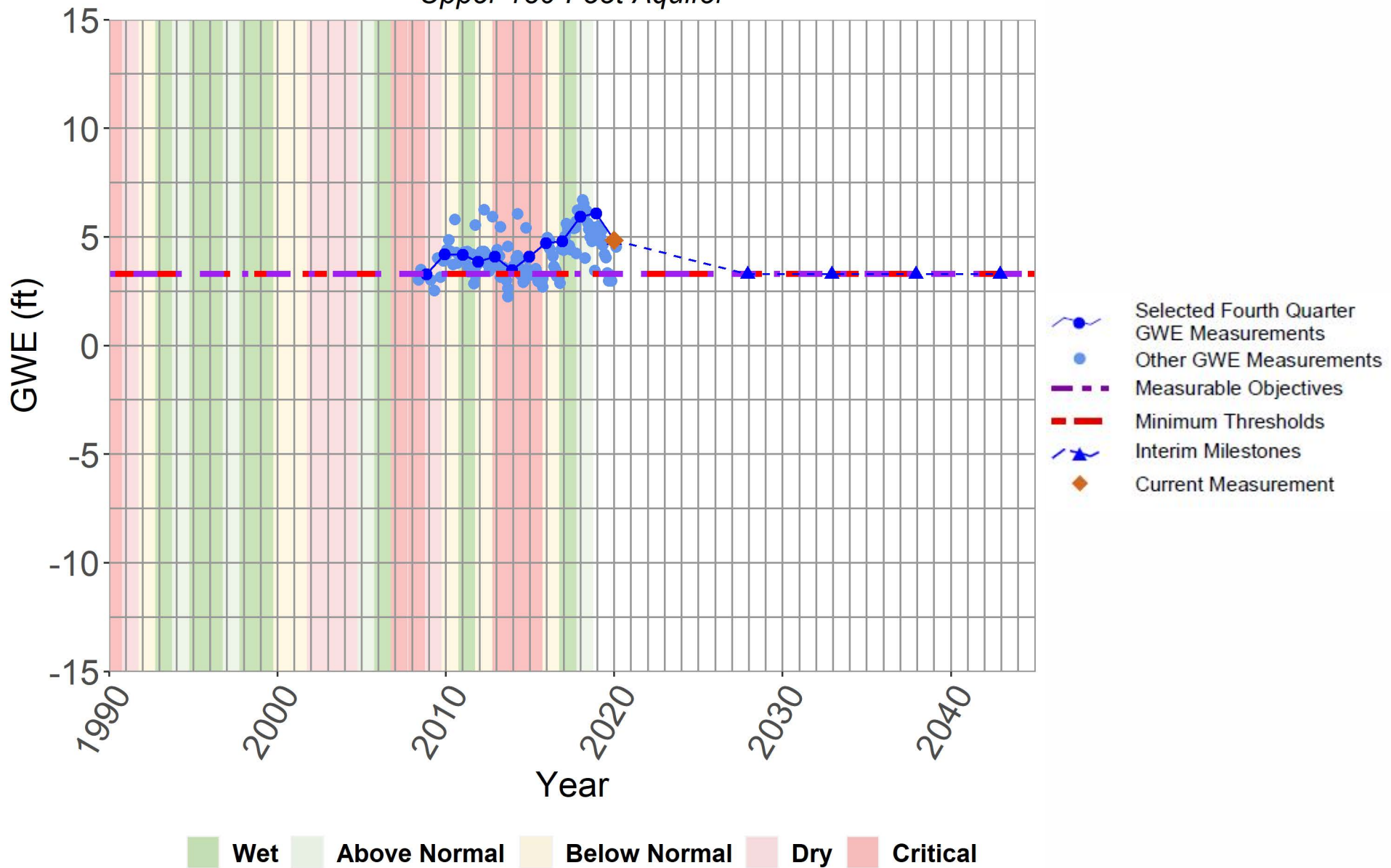
MW-OU2-34-A

Dune Sand Aquifer



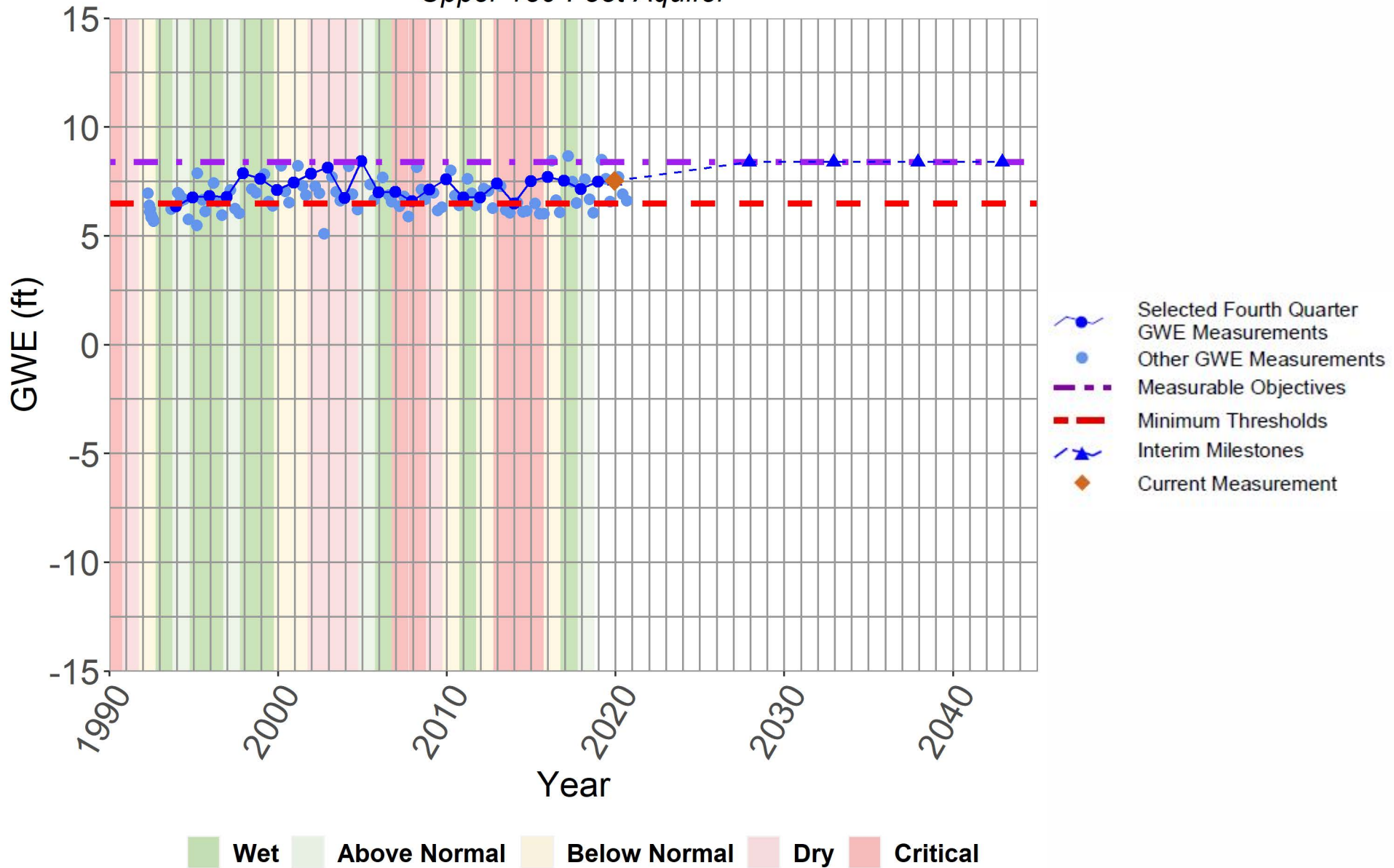
CDM MW-1 Beach

Upper 180-Foot Aquifer



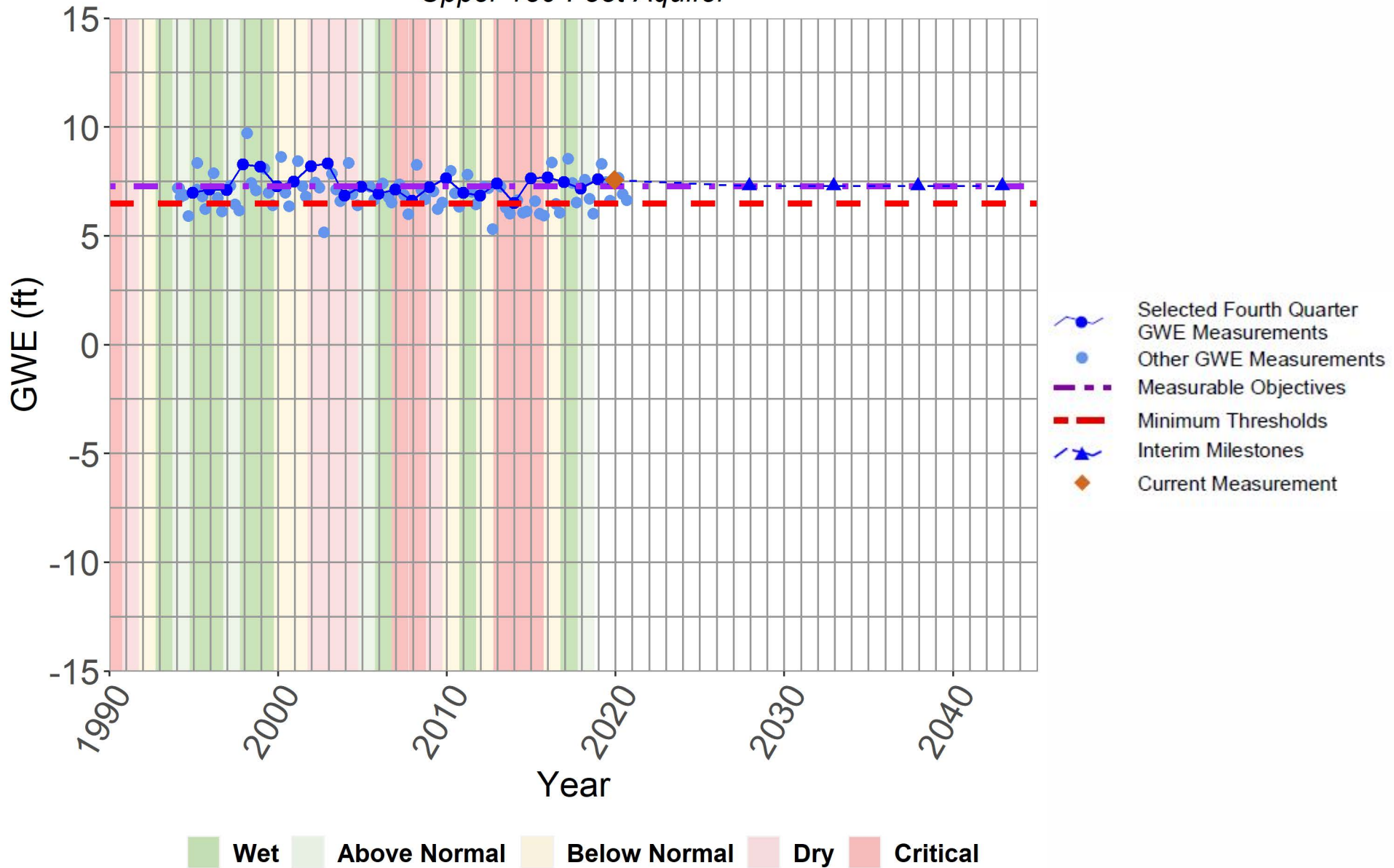
MW-02-05-180

Upper 180-Foot Aquifer



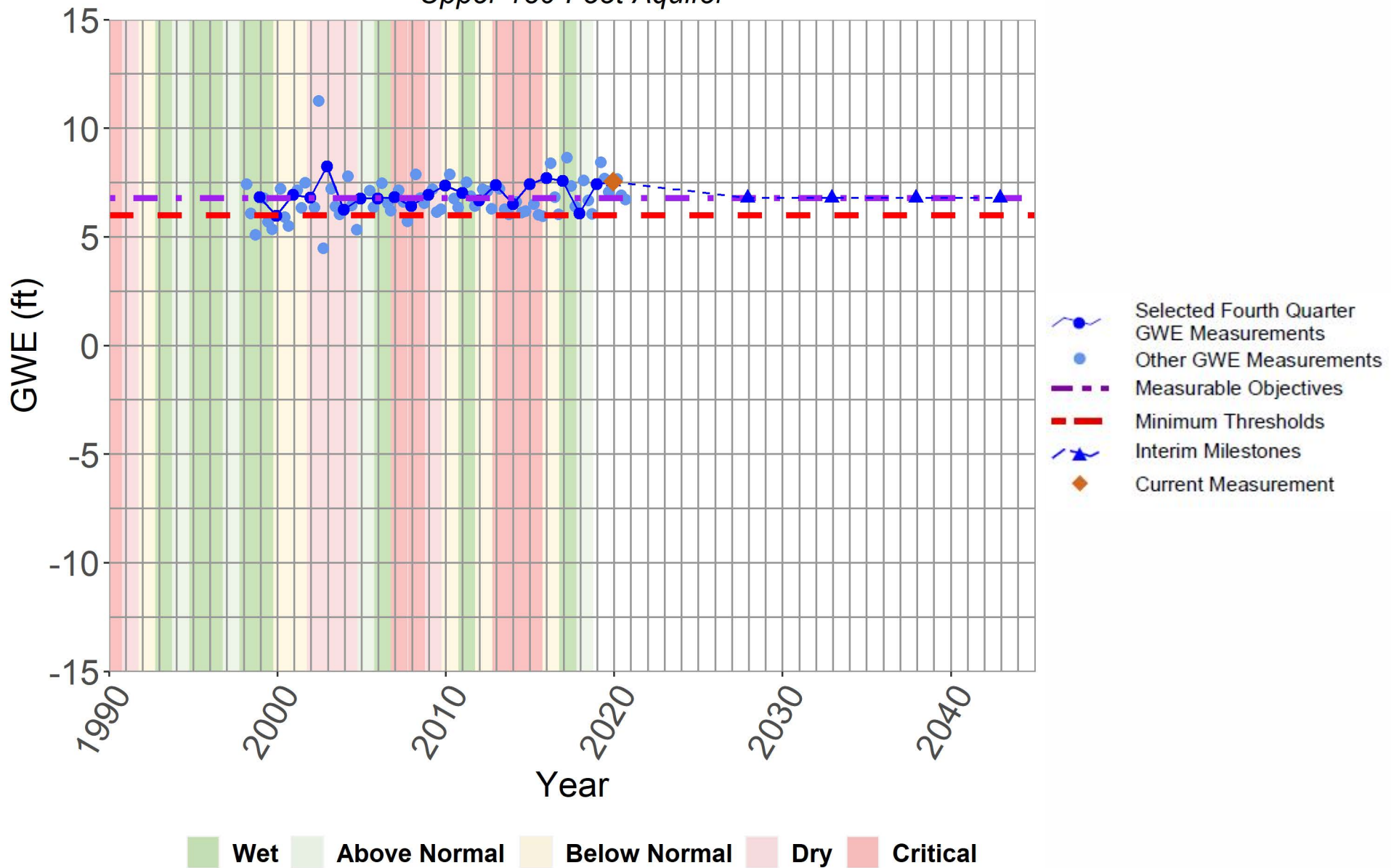
MW-02-10-180

Upper 180-Foot Aquifer



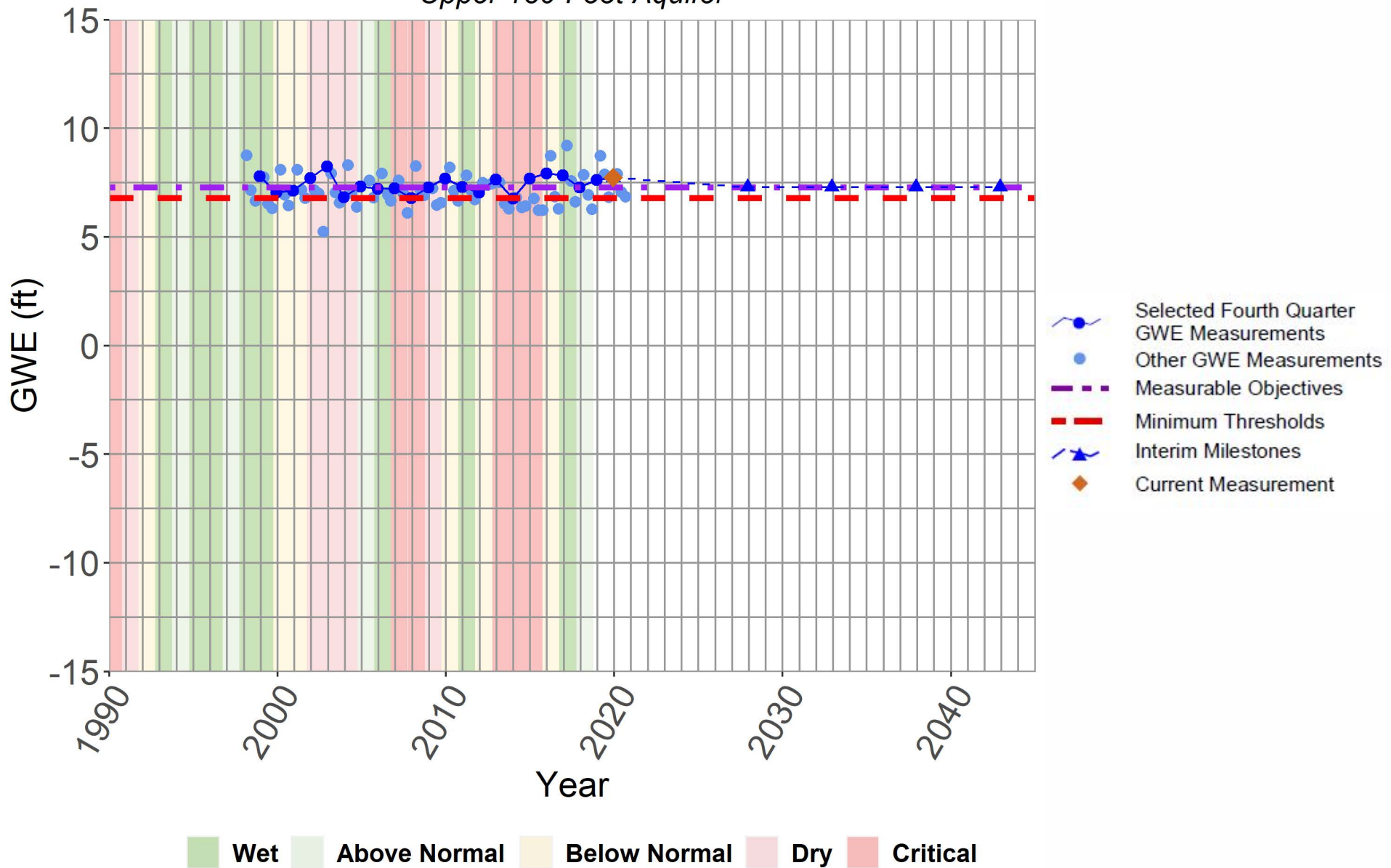
MW-02-13-180M

Upper 180-Foot Aquifer



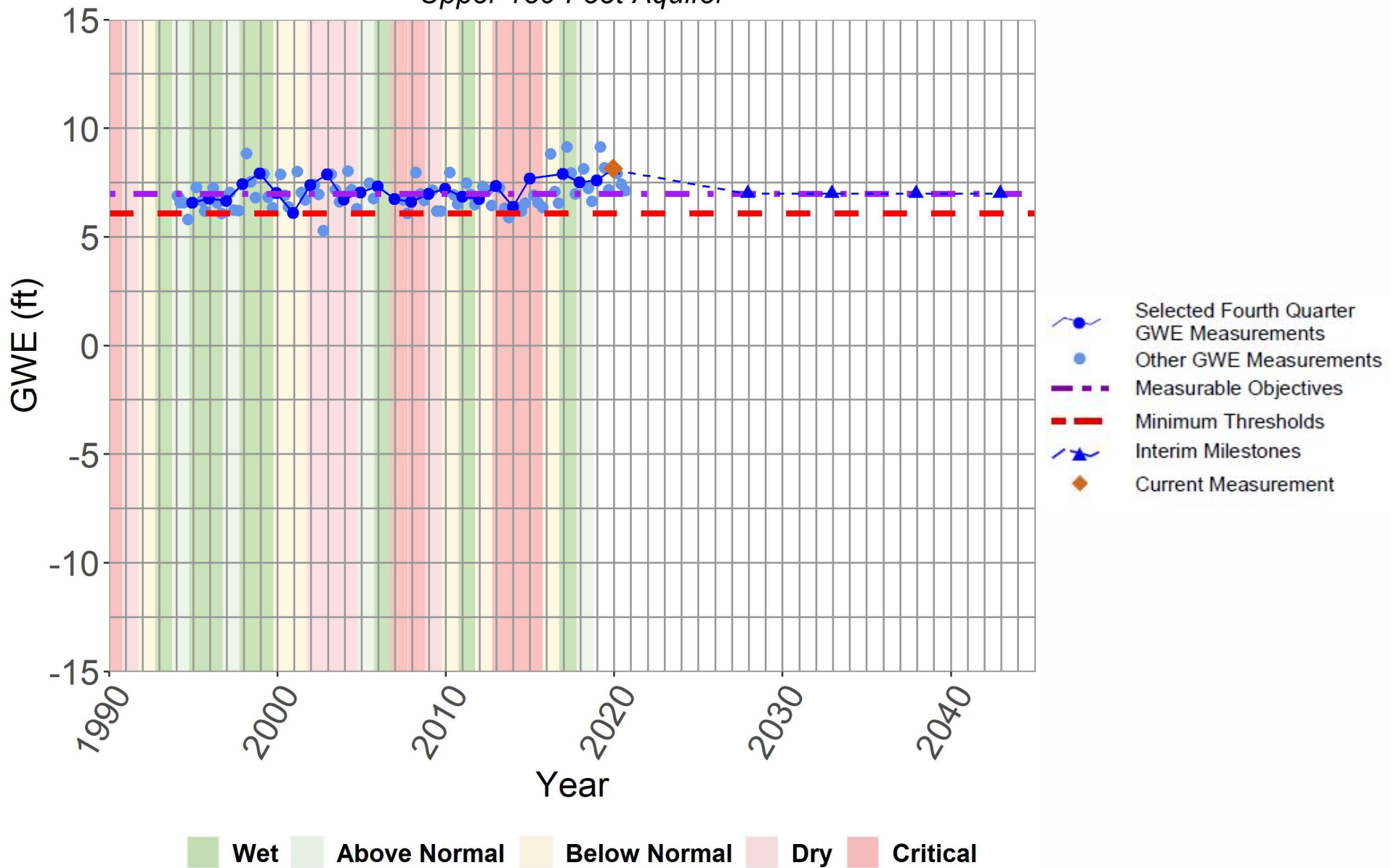
MW-02-13-180U

Upper 180-Foot Aquifer



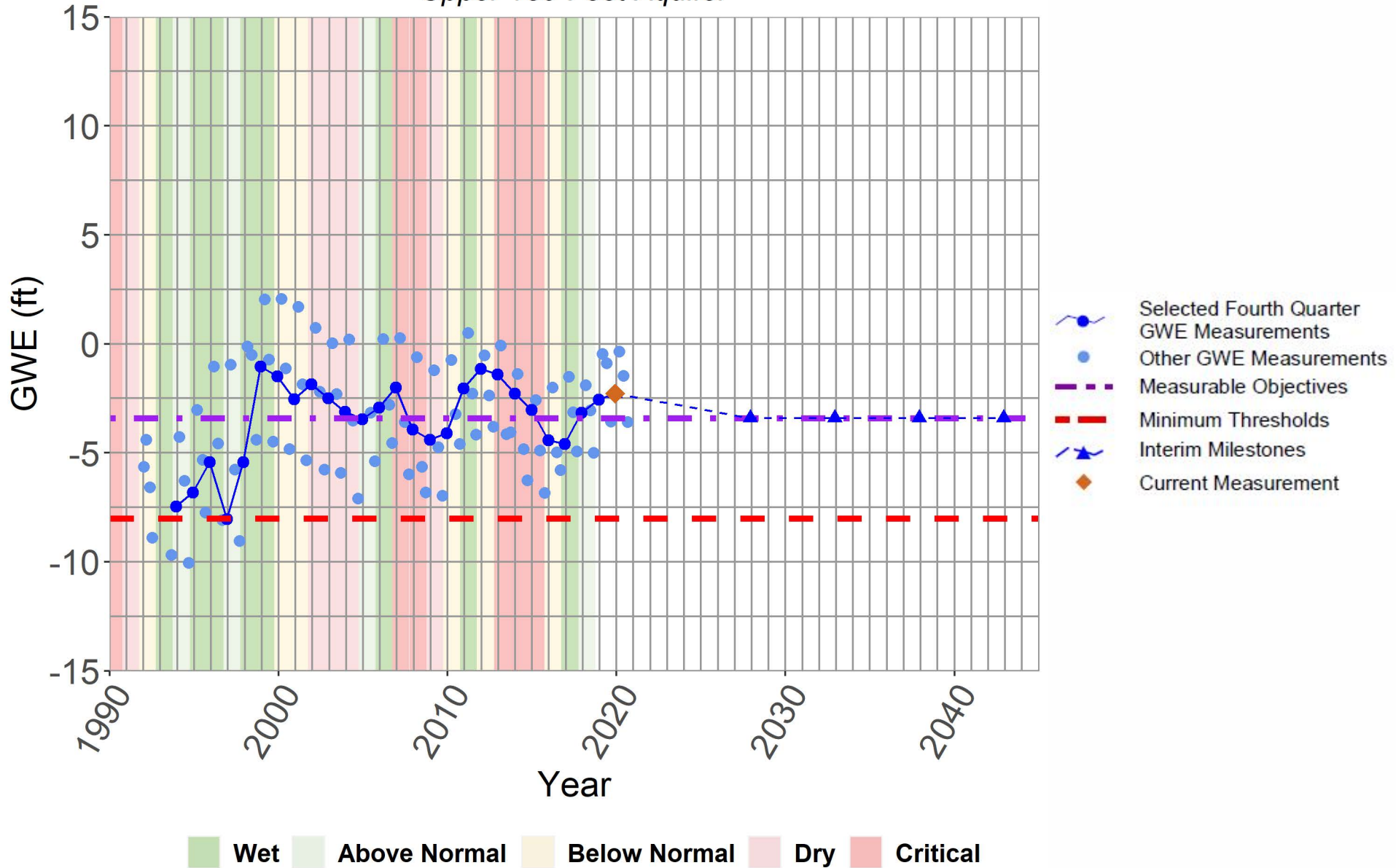
MW-12-07-180

Upper 180-Foot Aquifer



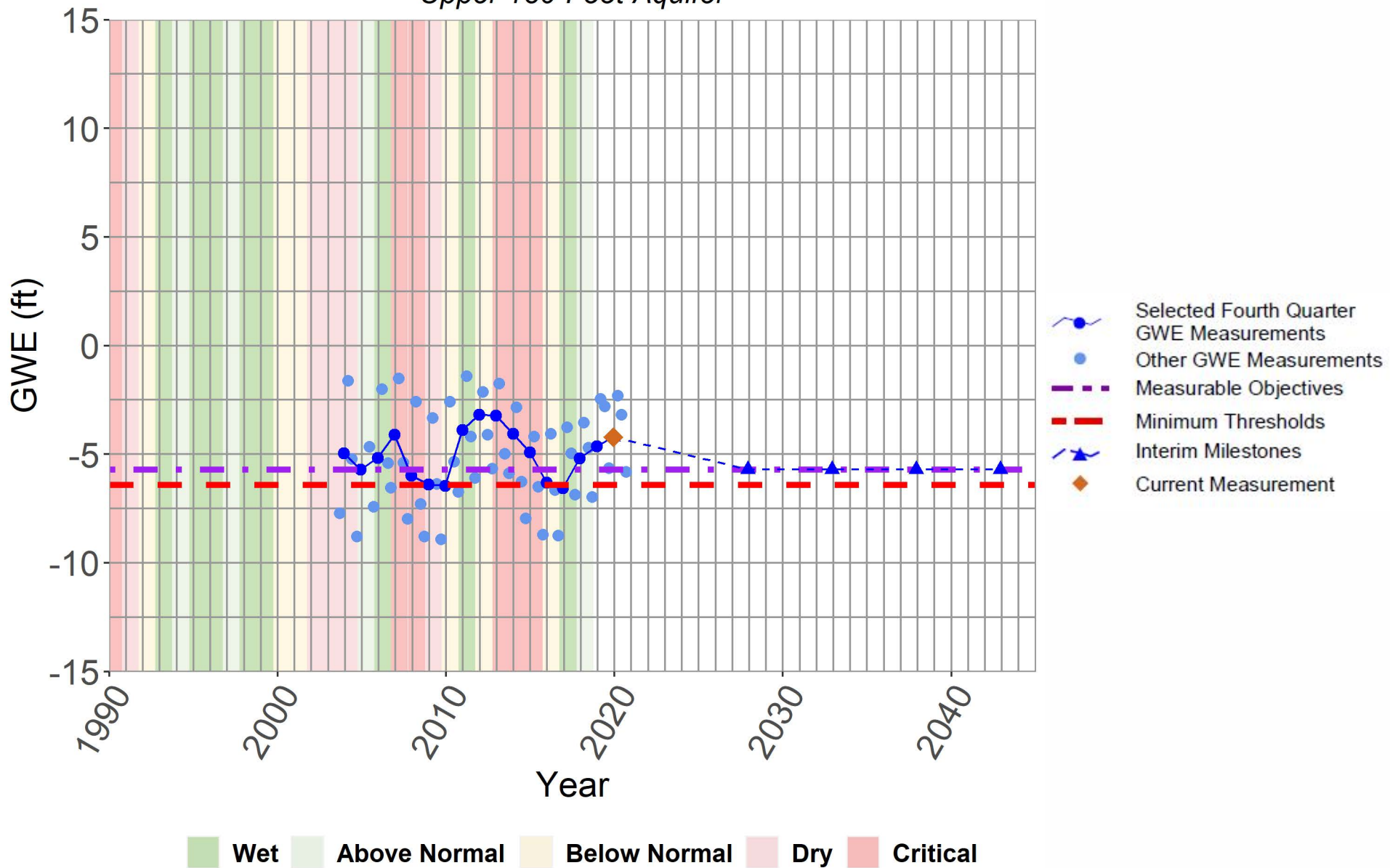
MW-B-05-180

Upper 180-Foot Aquifer



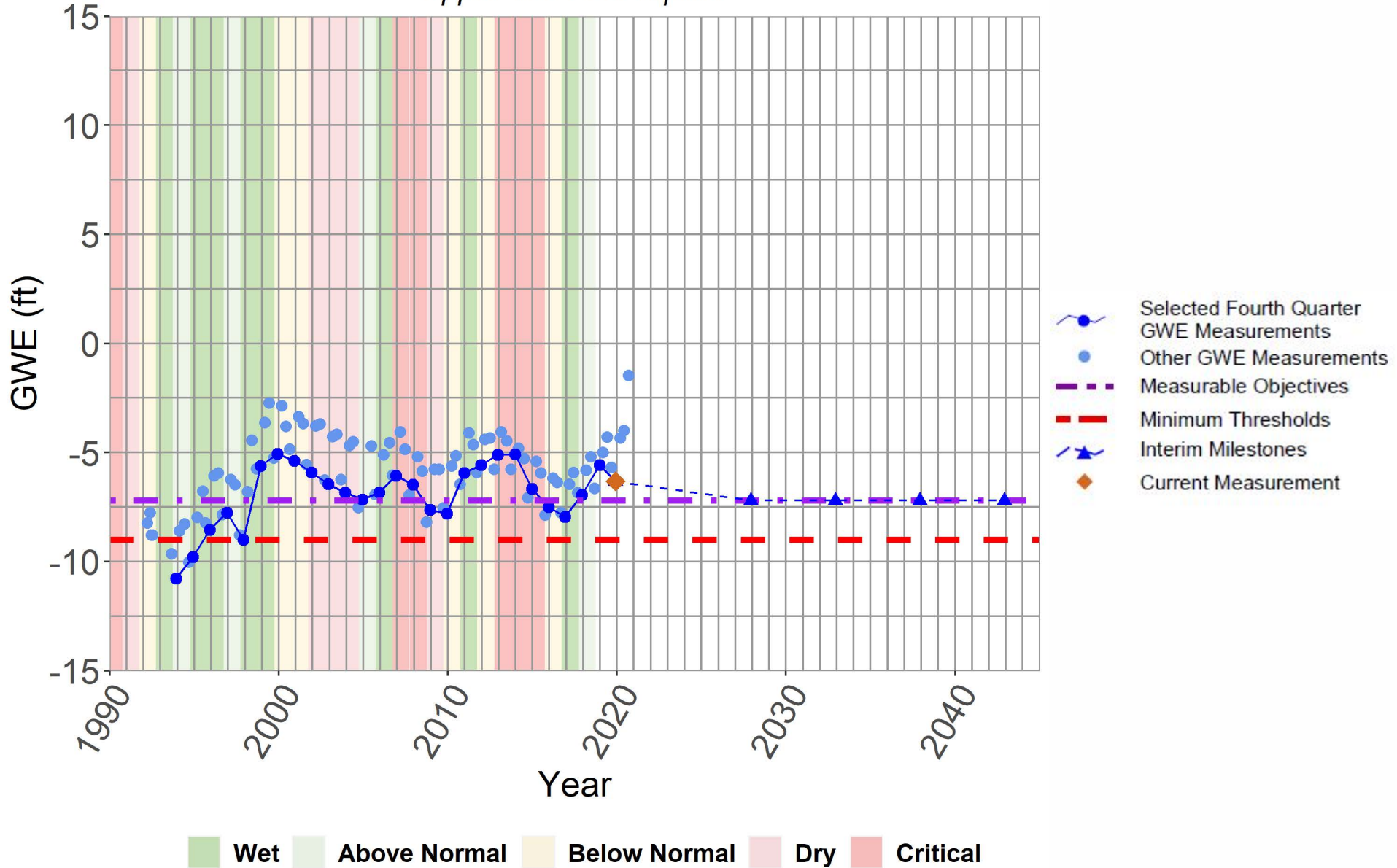
MW-BW-55-180

Upper 180-Foot Aquifer



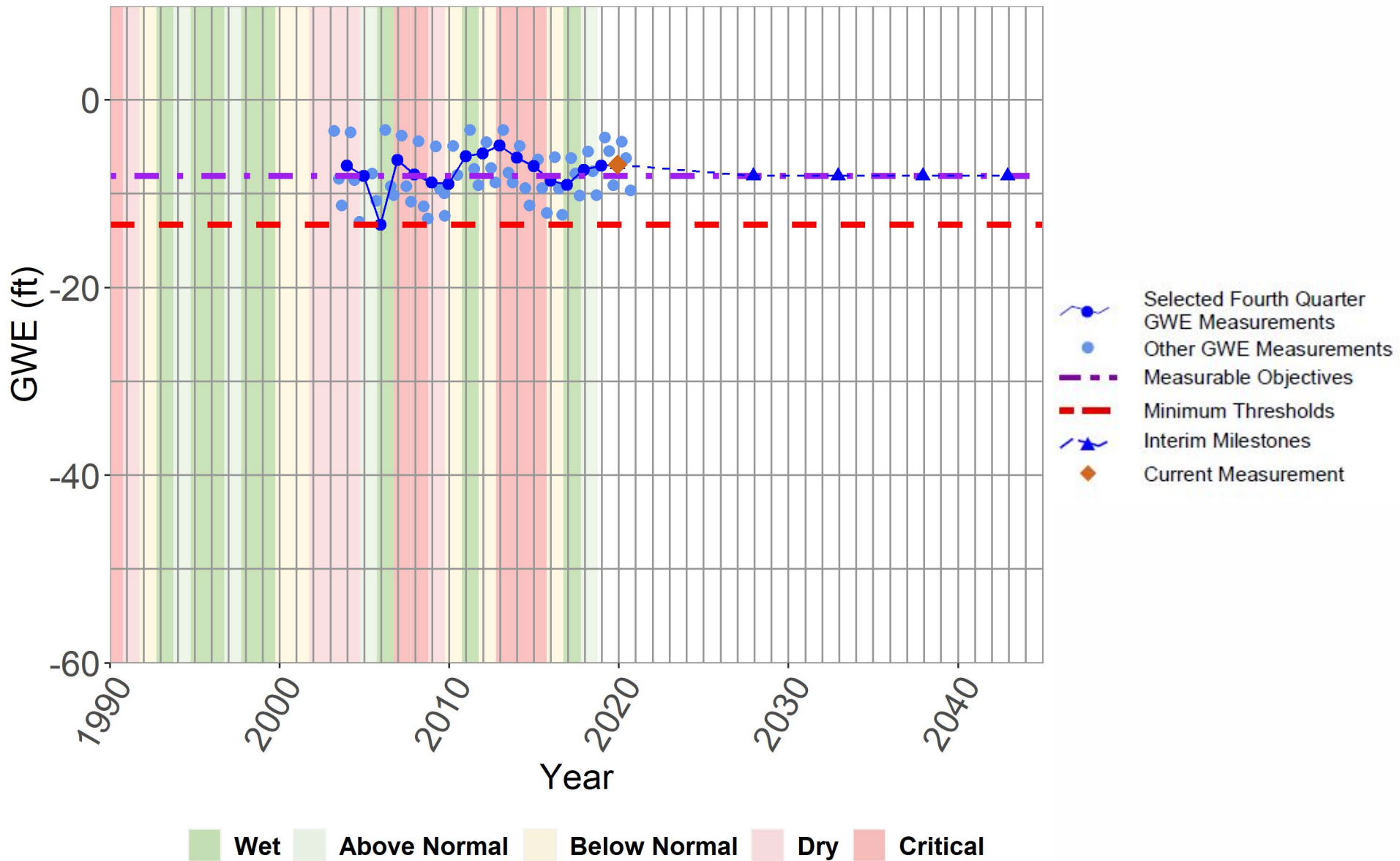
MW-OU2-29-180

Upper 180-Foot Aquifer



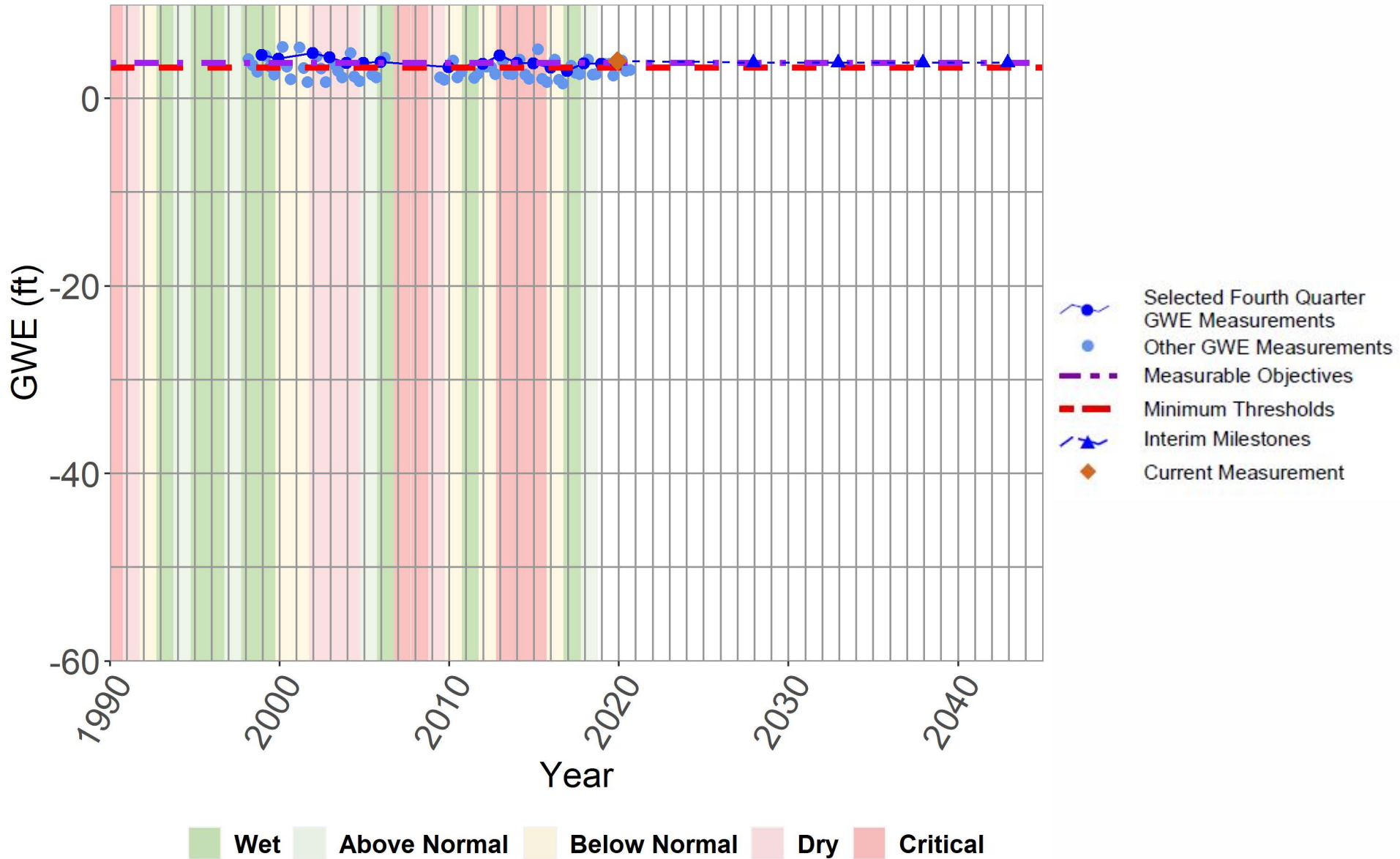
MP-BW-42-295

Lower 180-Foot Aquifer



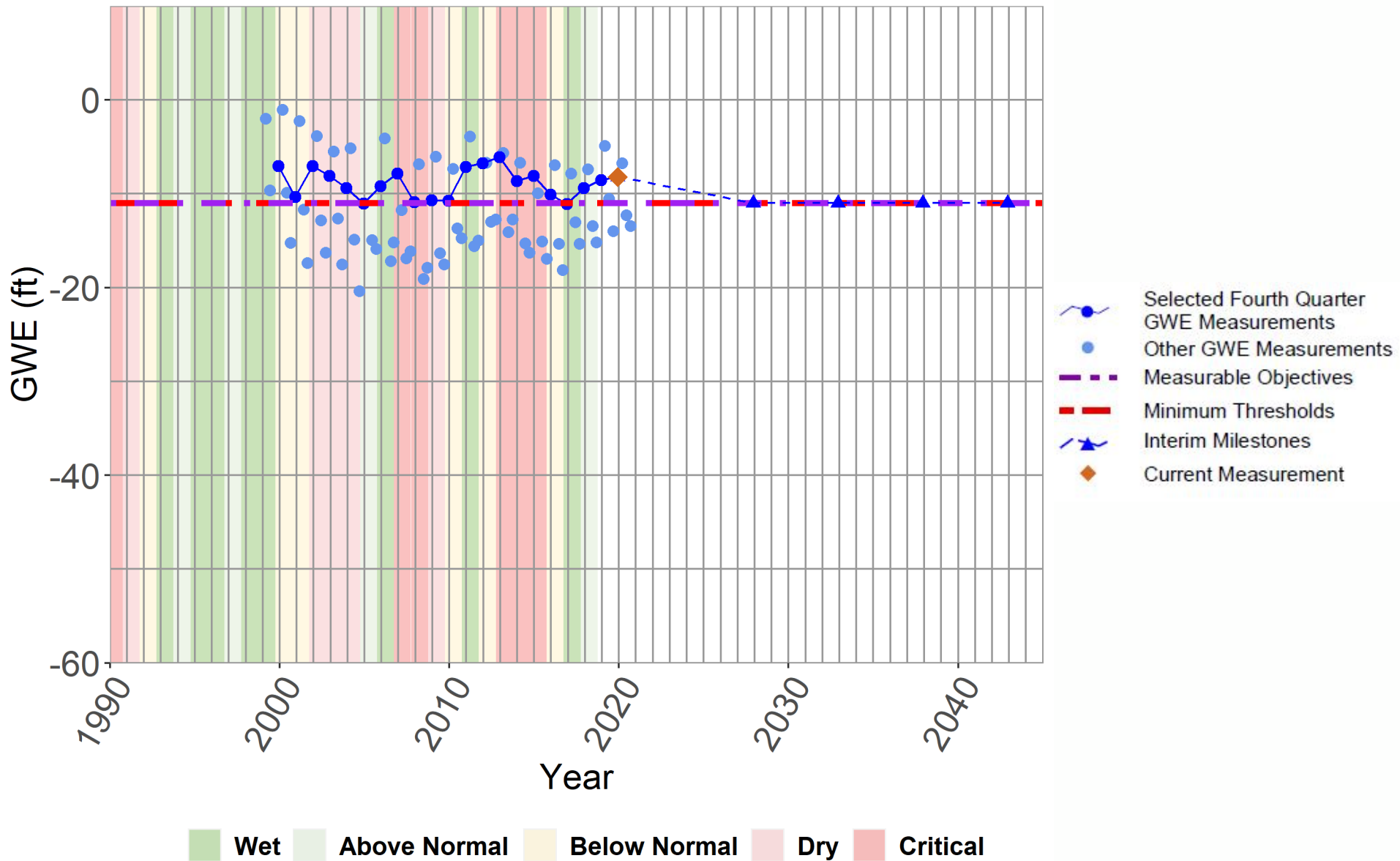
MW-12-12-180L

Lower 180-Foot Aquifer



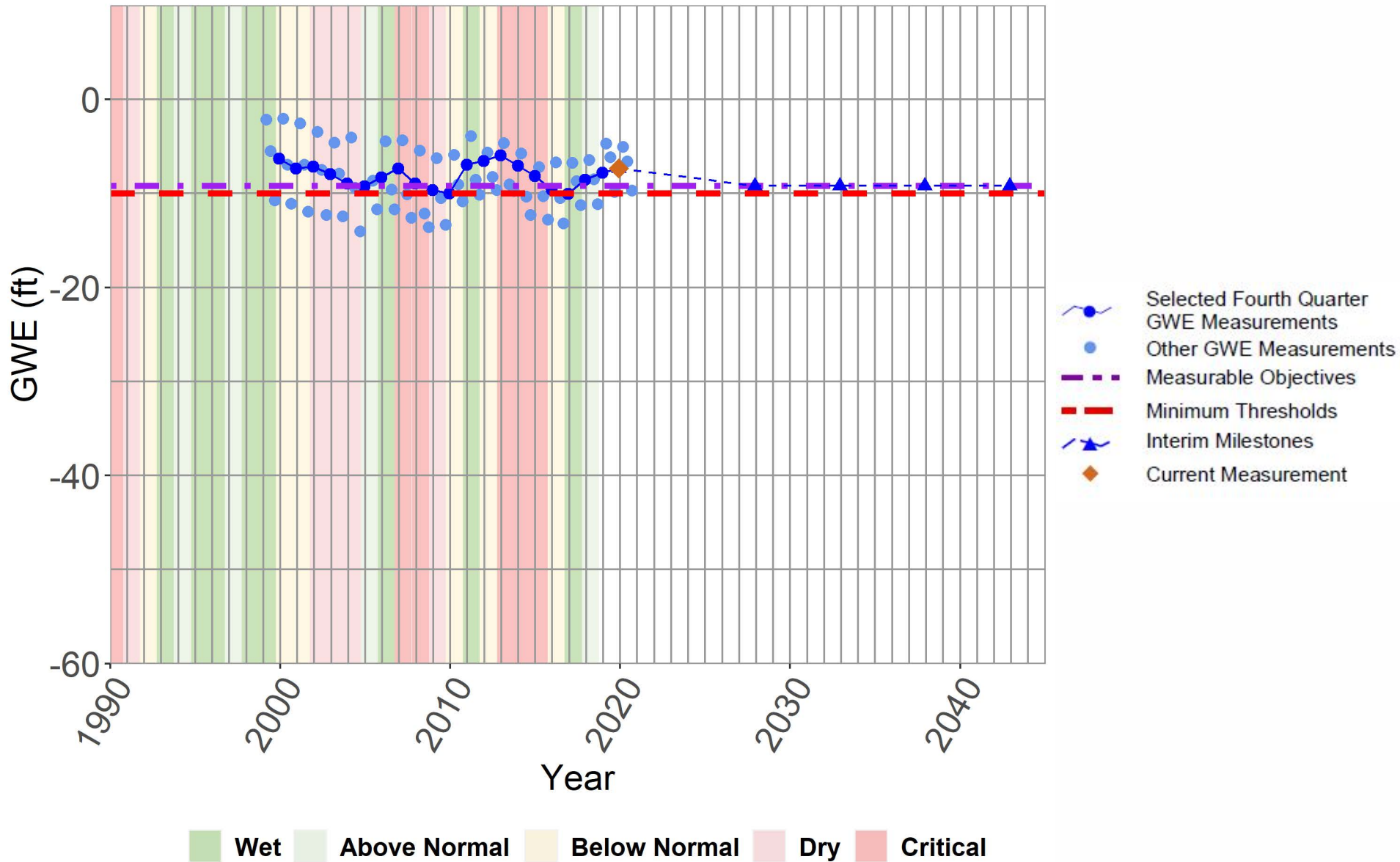
MW-BW-04-180

Lower 180-Foot Aquifer



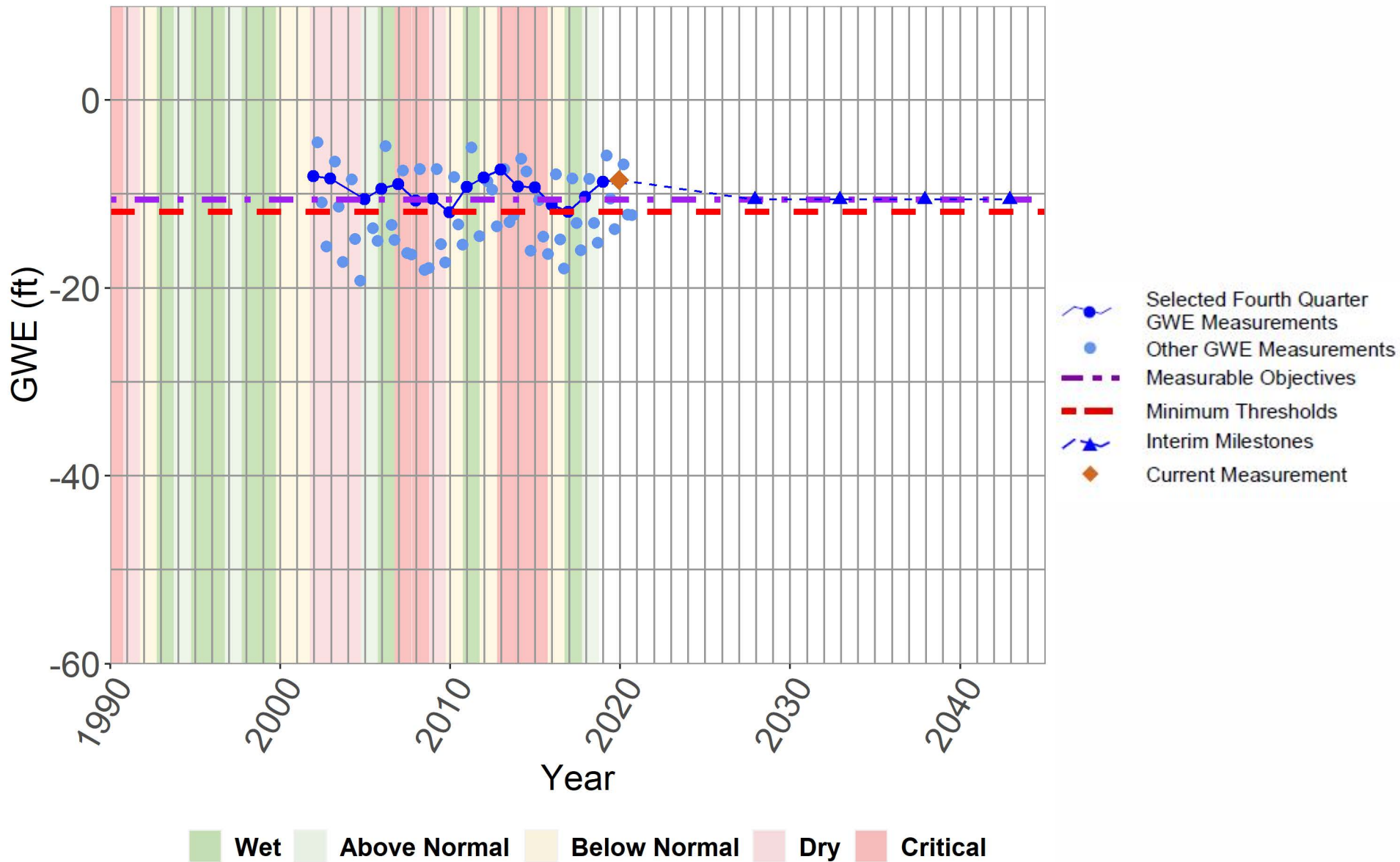
MW-OU2-66-180

Lower 180-Foot Aquifer



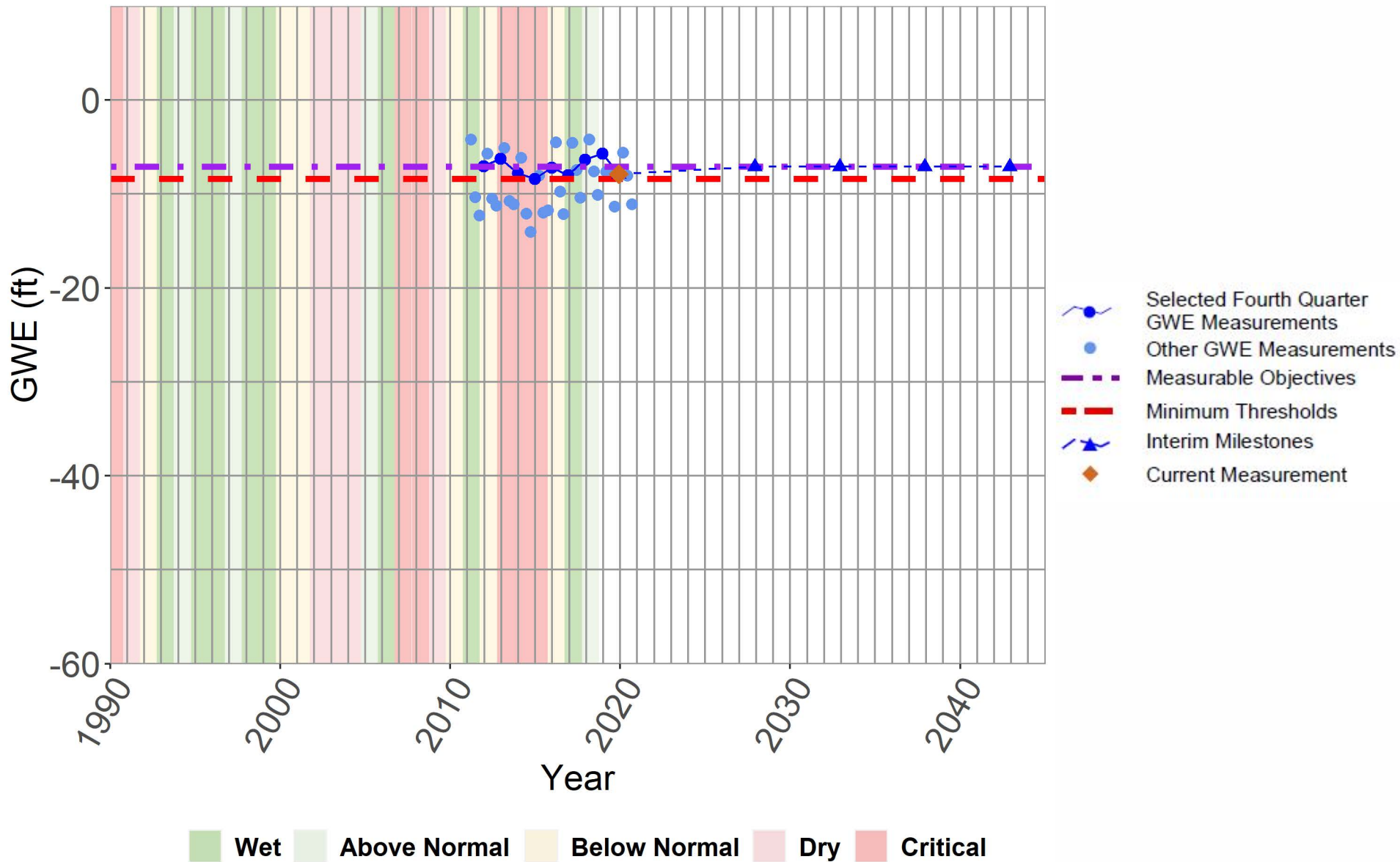
TEST2

Lower 180-Foot Aquifer



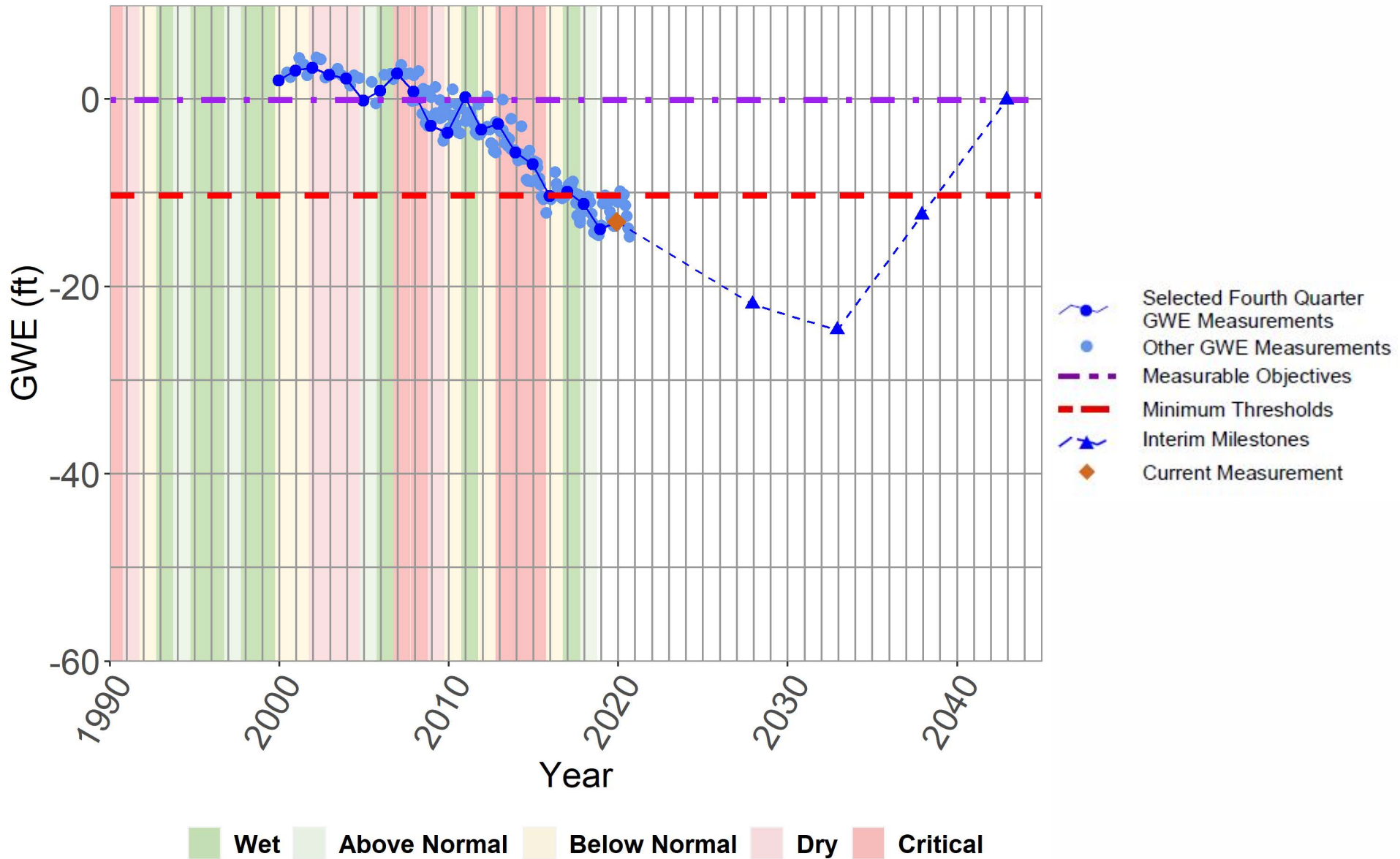
MP-BW-50-289

Lower 180-Foot, 400-Foot Aquifer



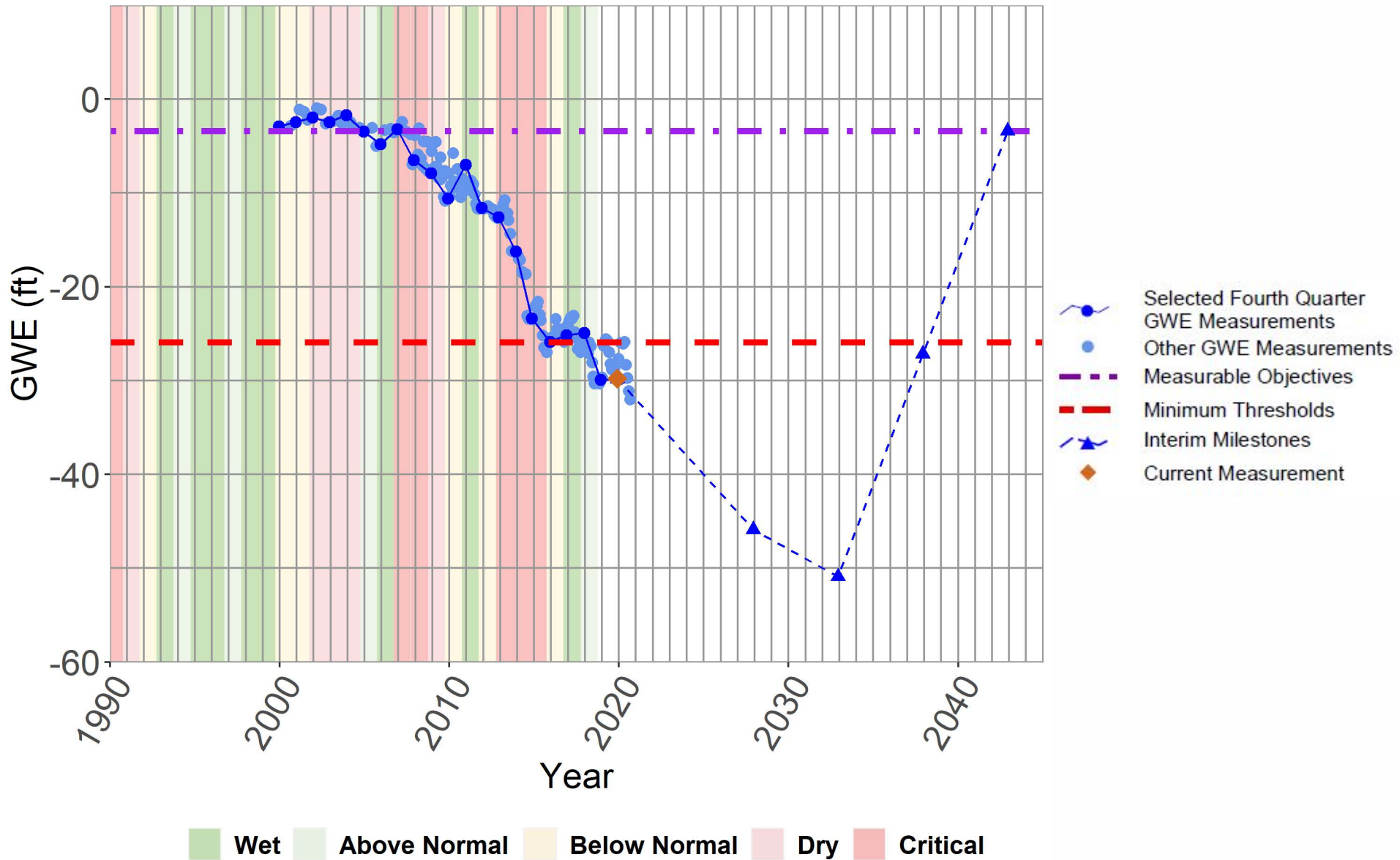
MPWMD#FO-10S

400-Foot Aquifer



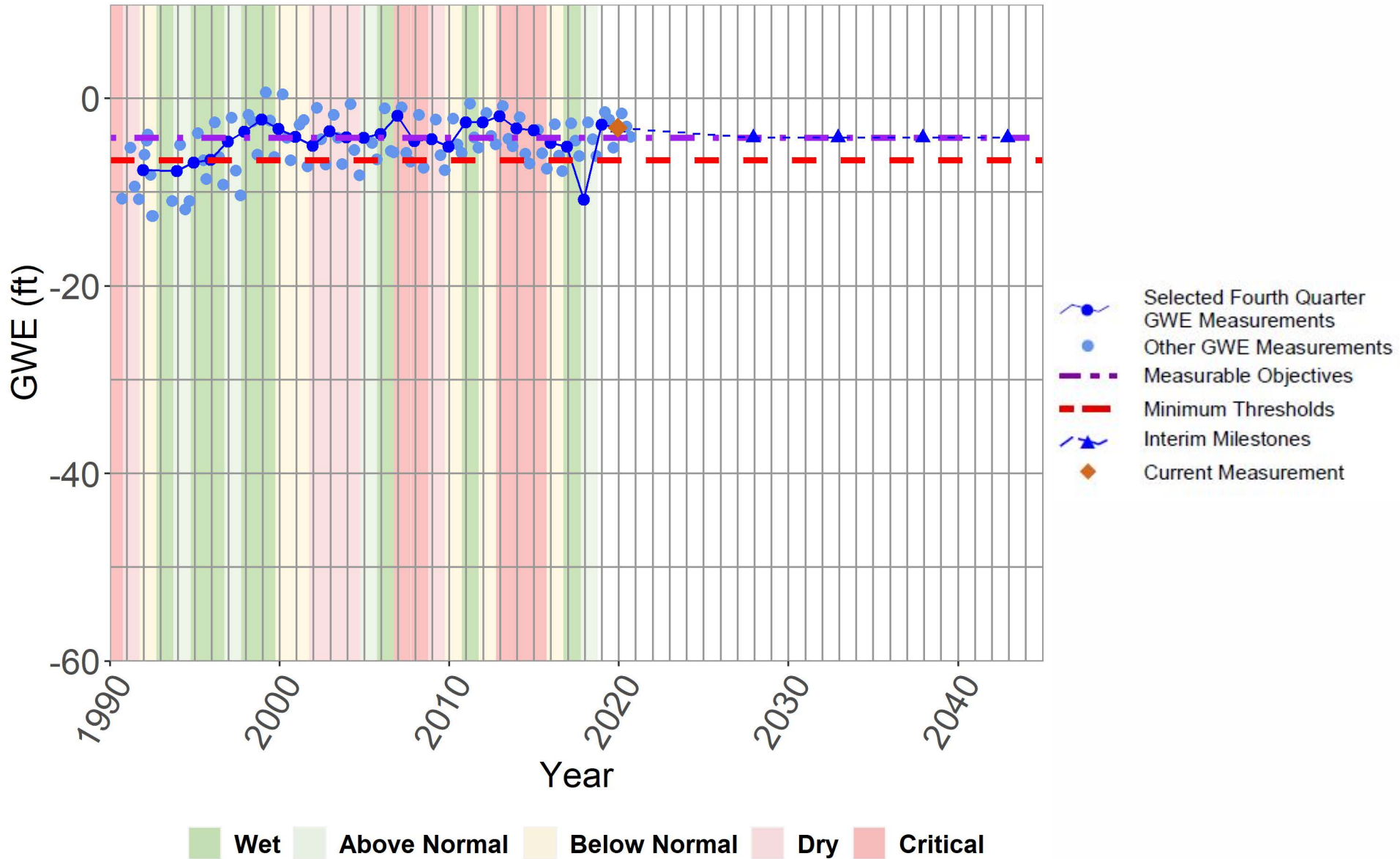
MPWMD#FO-11S

400-Foot Aquifer



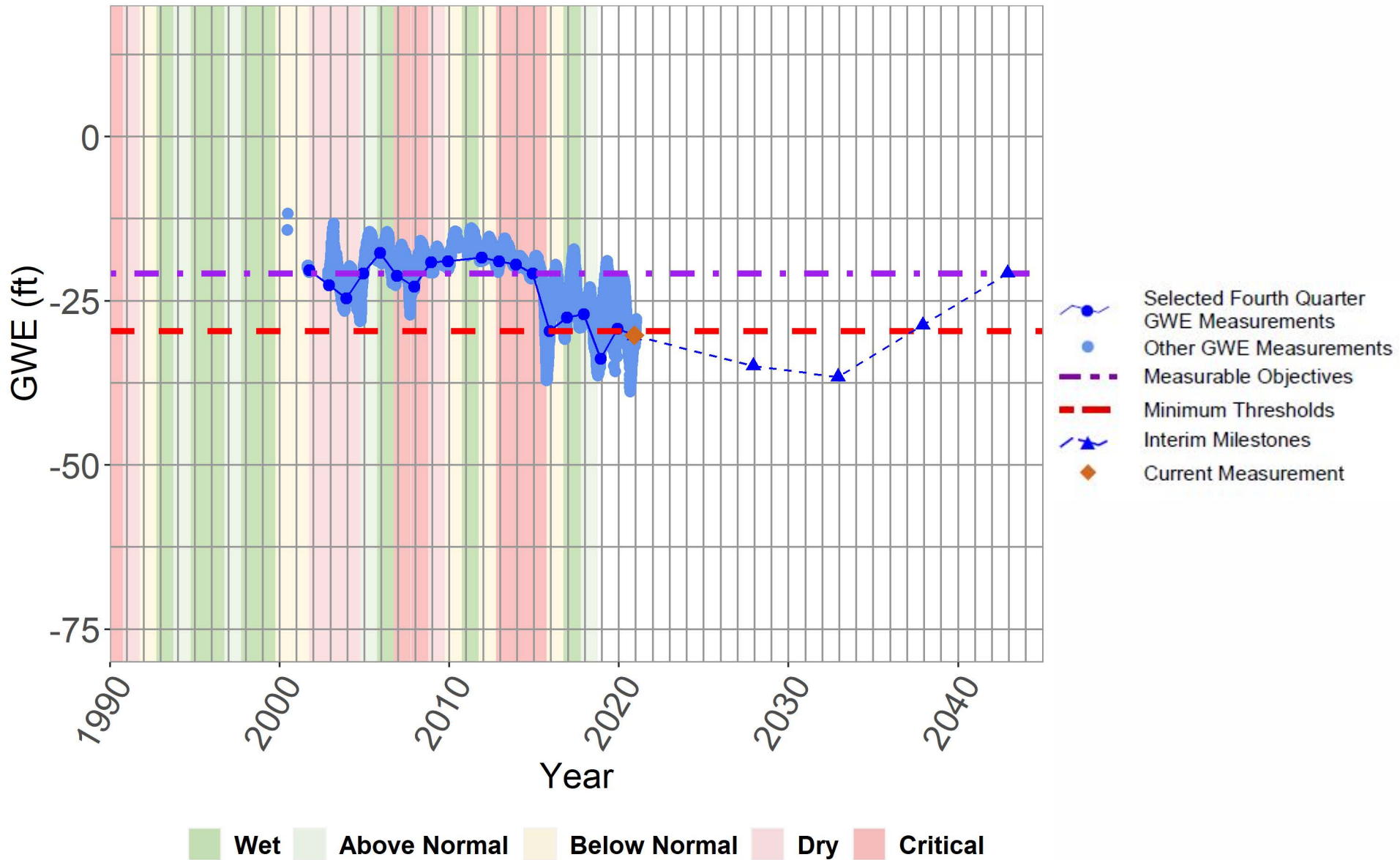
MW-OU2-07-400

400-Foot Aquifer



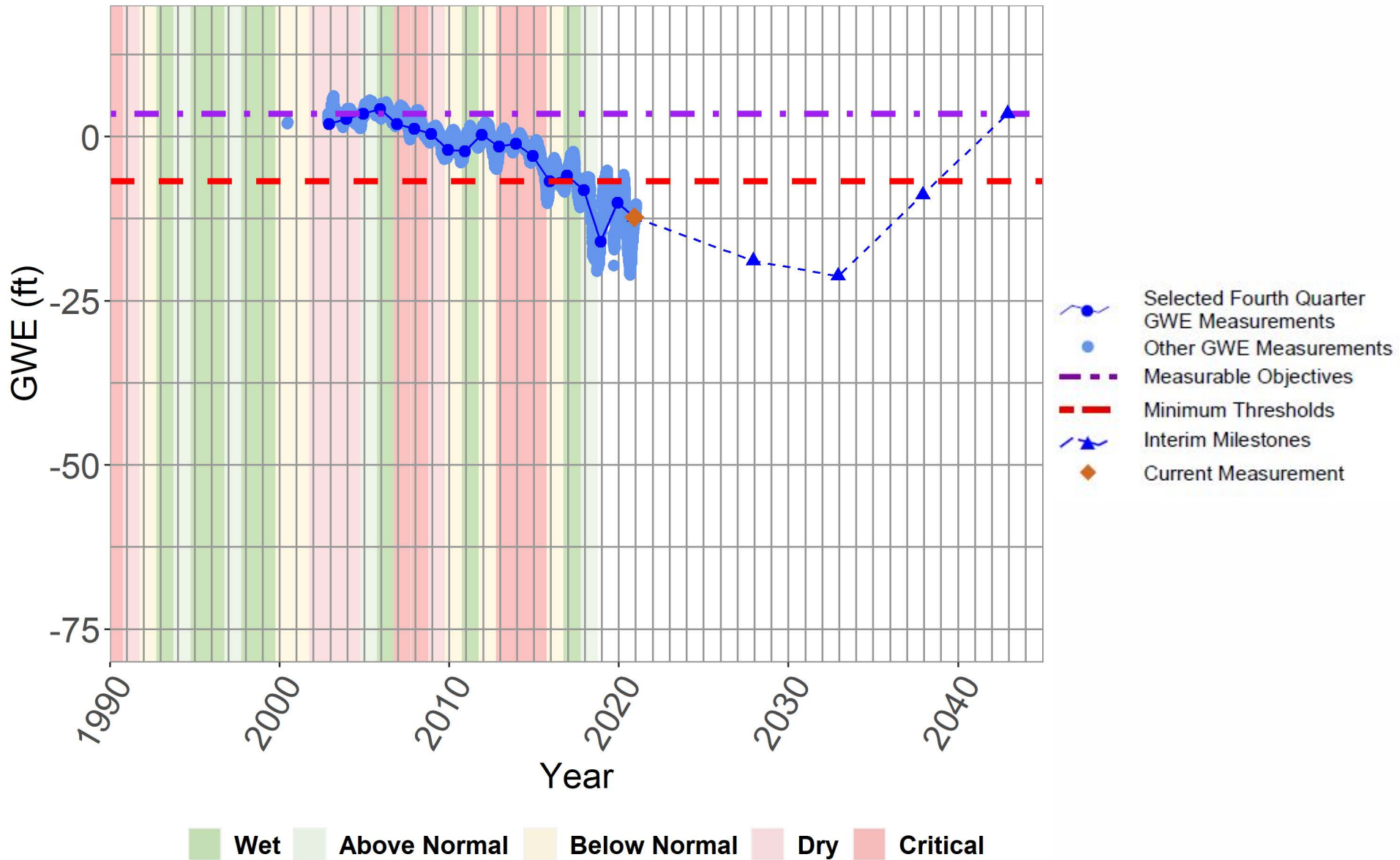
014S001E24L002M

Deep Aquifers



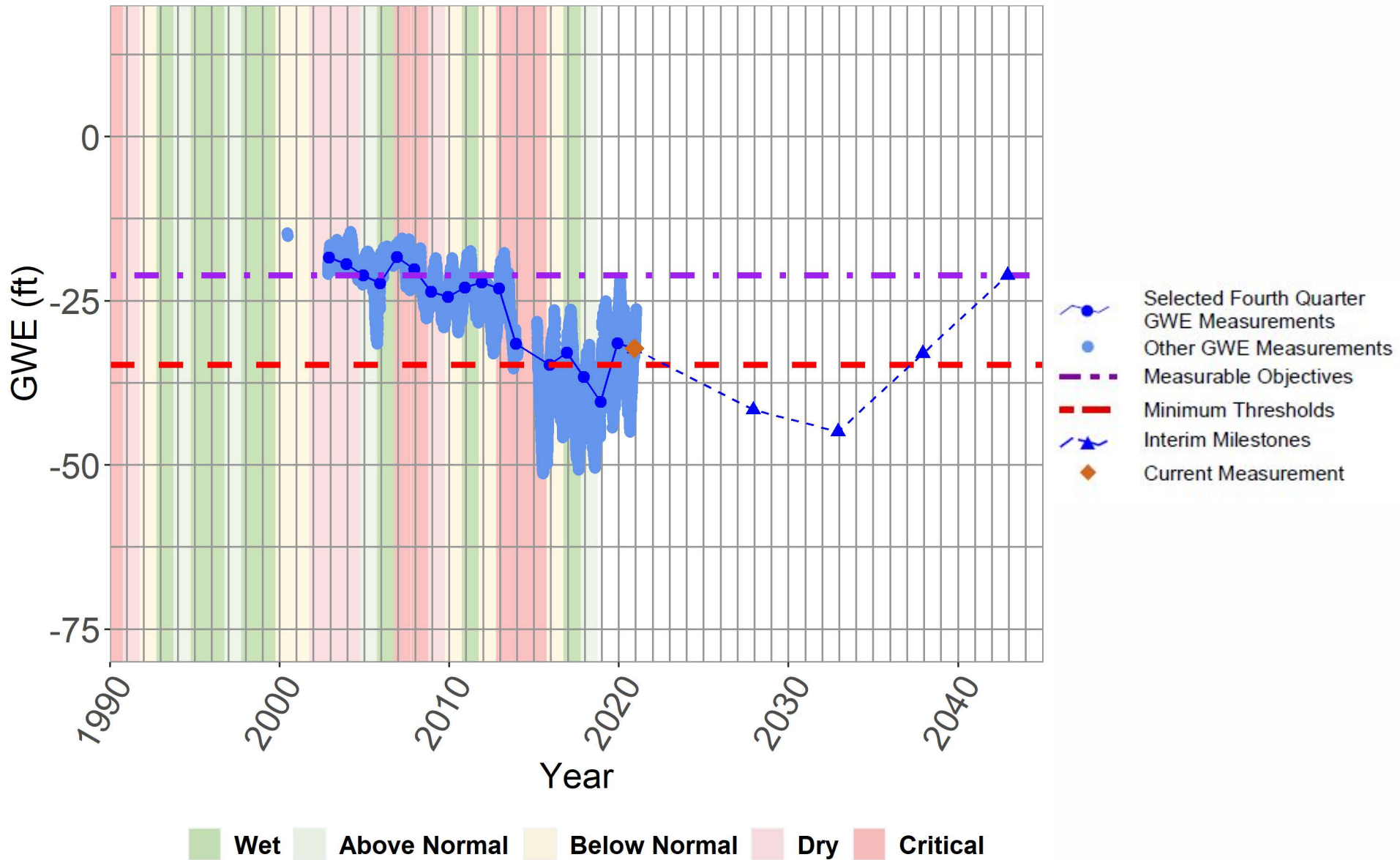
014S001E24L003M

Deep Aquifers



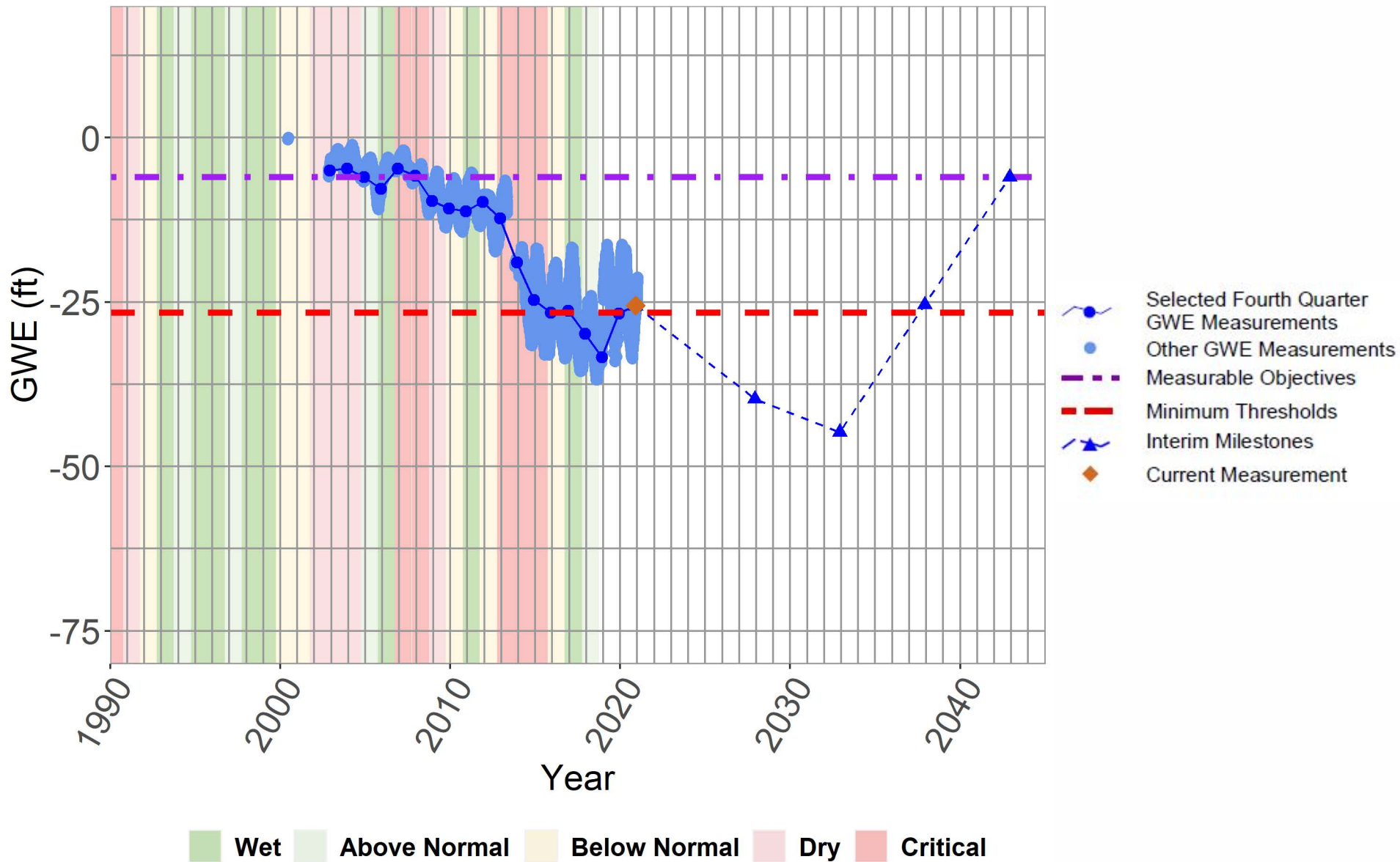
014S001E24L004M

Deep Aquifers



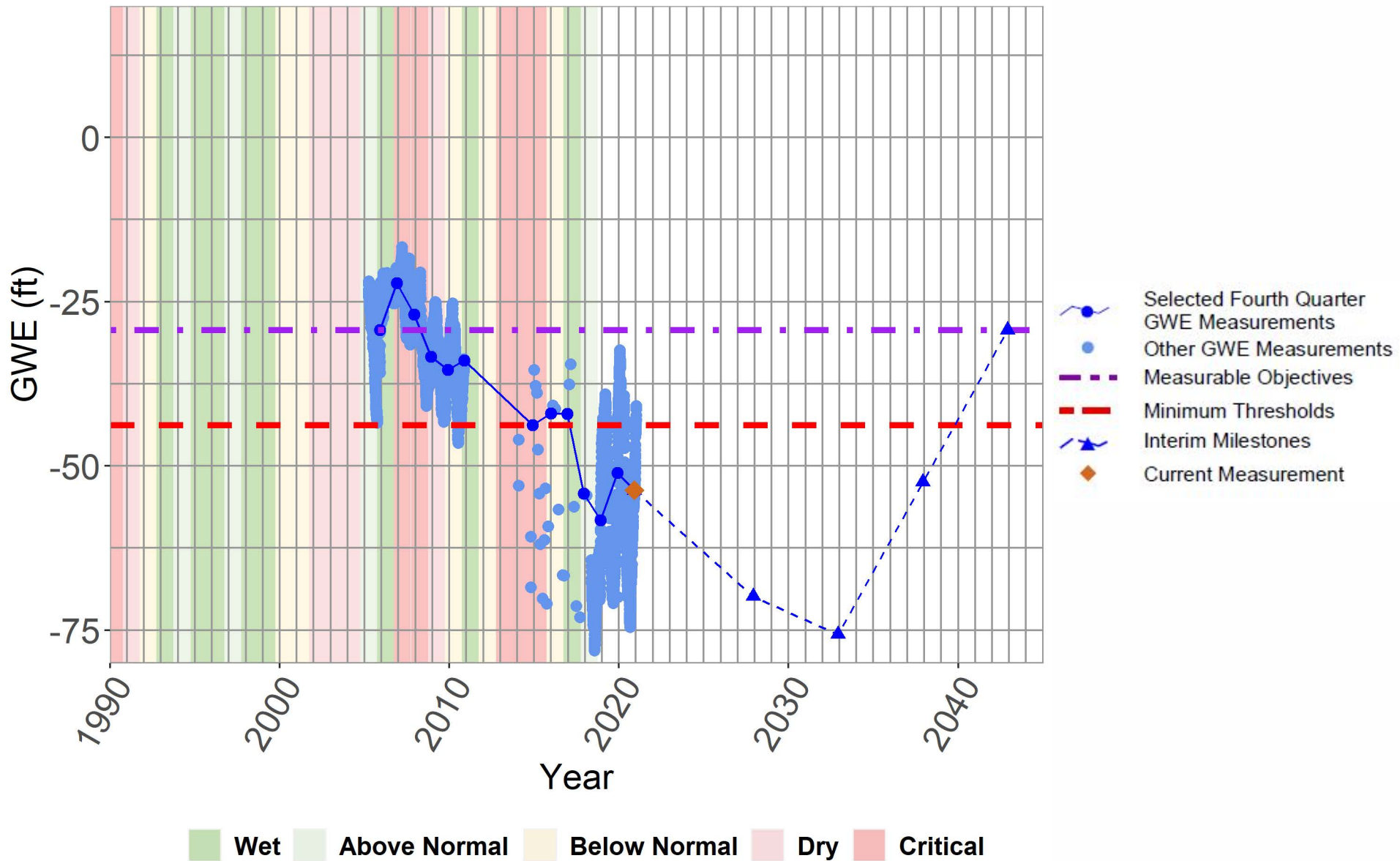
014S001E24L005M

Deep Aquifers



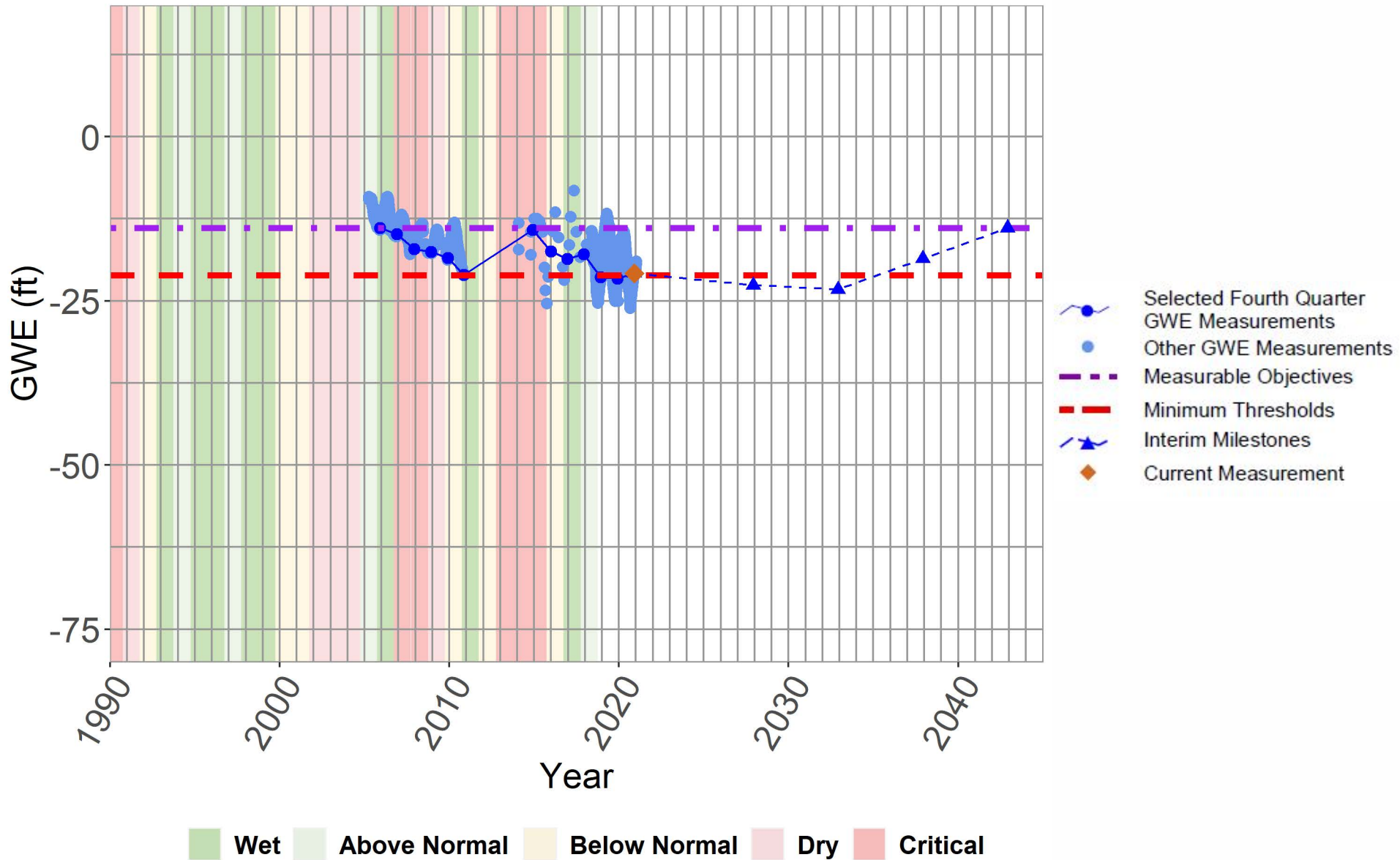
14S02E33E01

Deep Aquifers



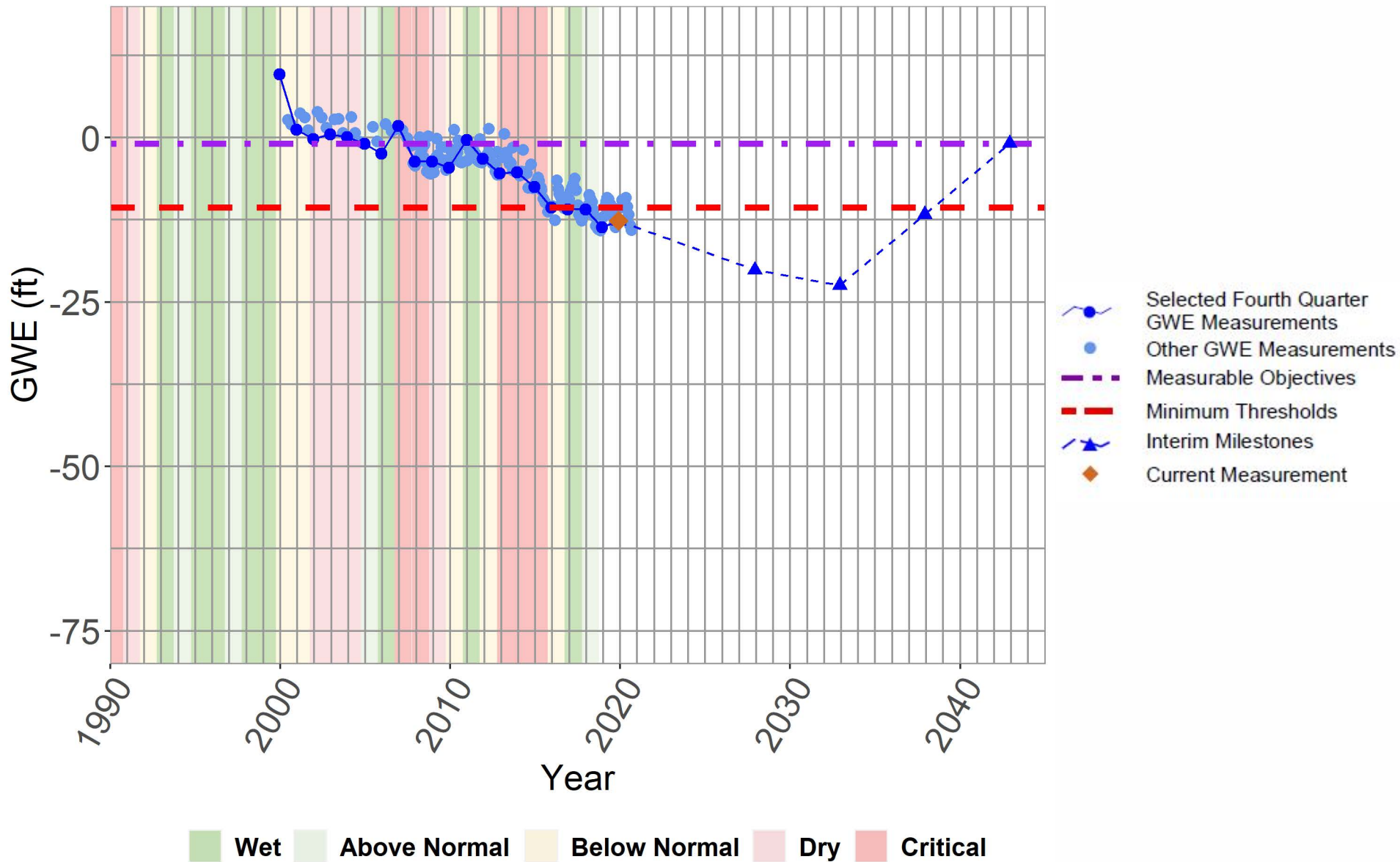
14S02E33E02

Deep Aquifers



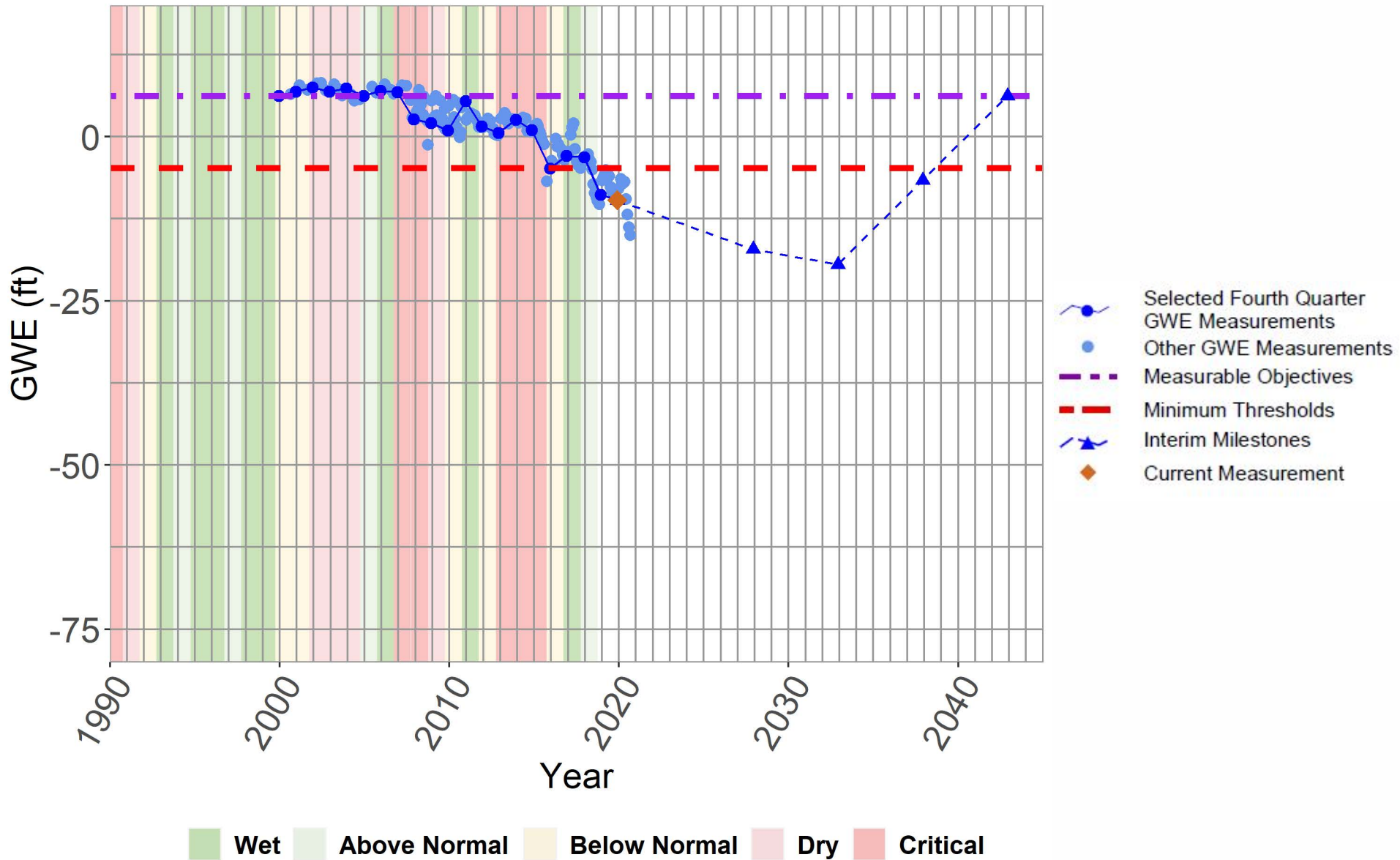
MPWMD#FO-10D

Deep Aquifers



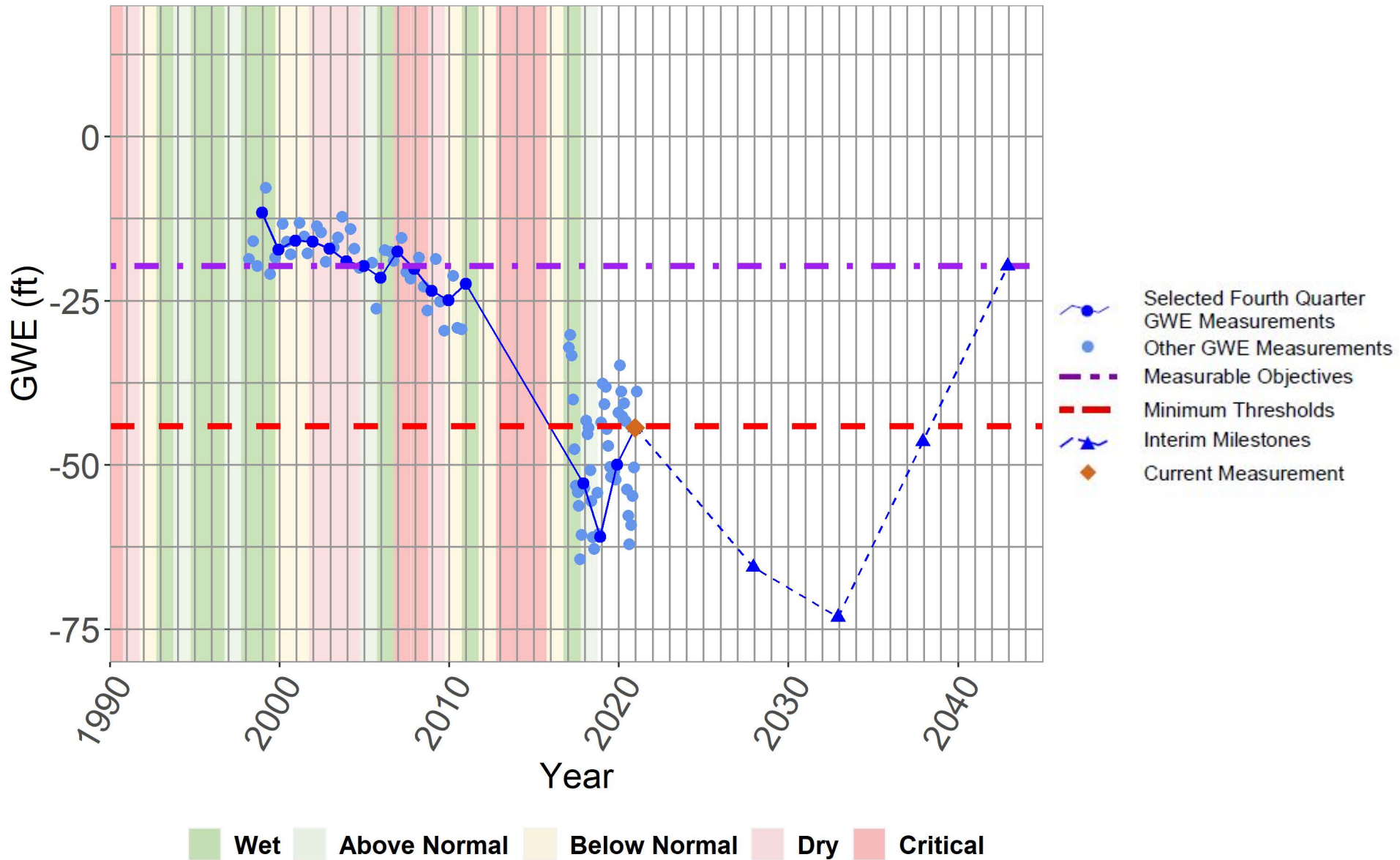
MPWMD#FO-11D

Deep Aquifers



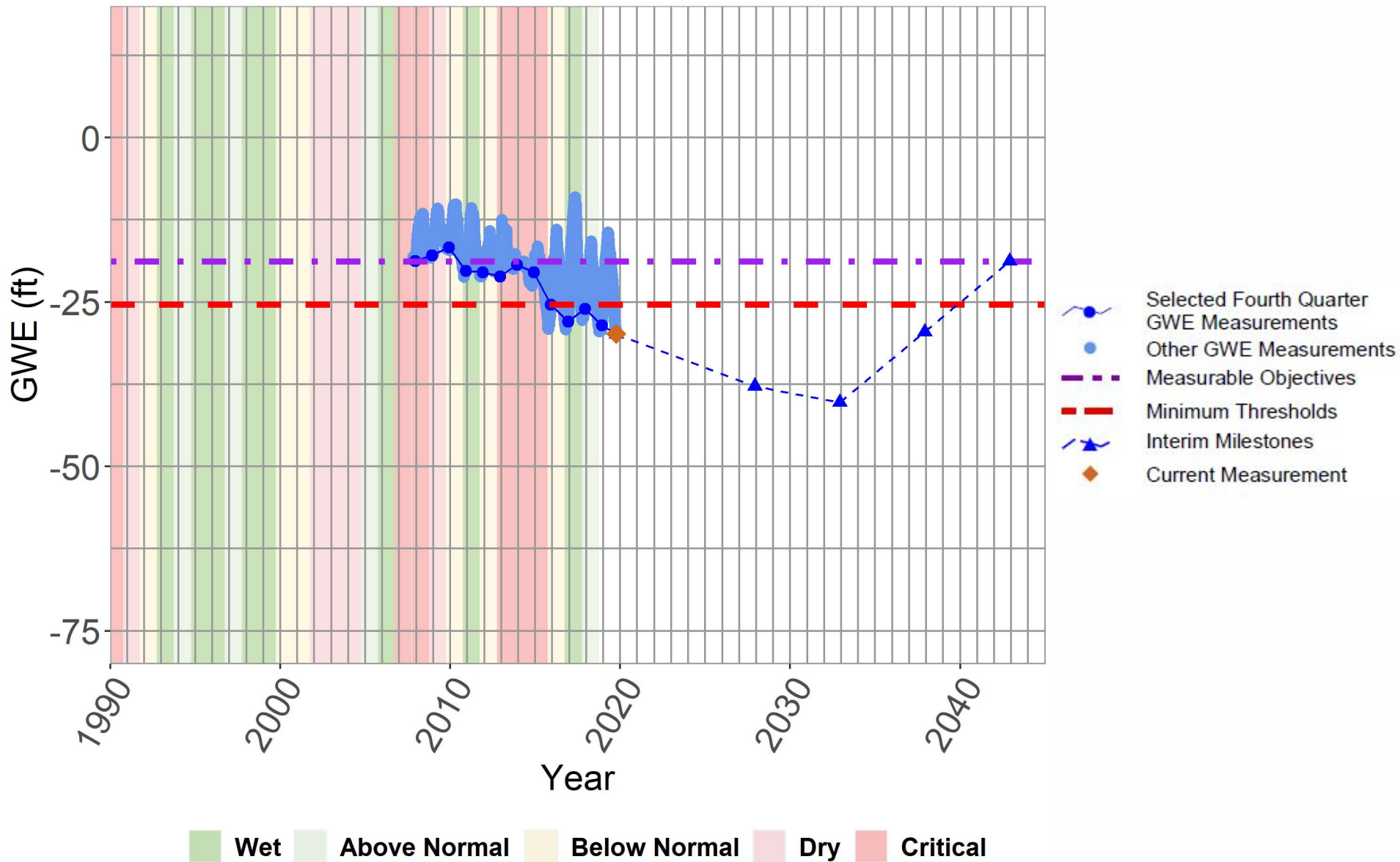
PZ-FO-32-910

Deep Aquifers



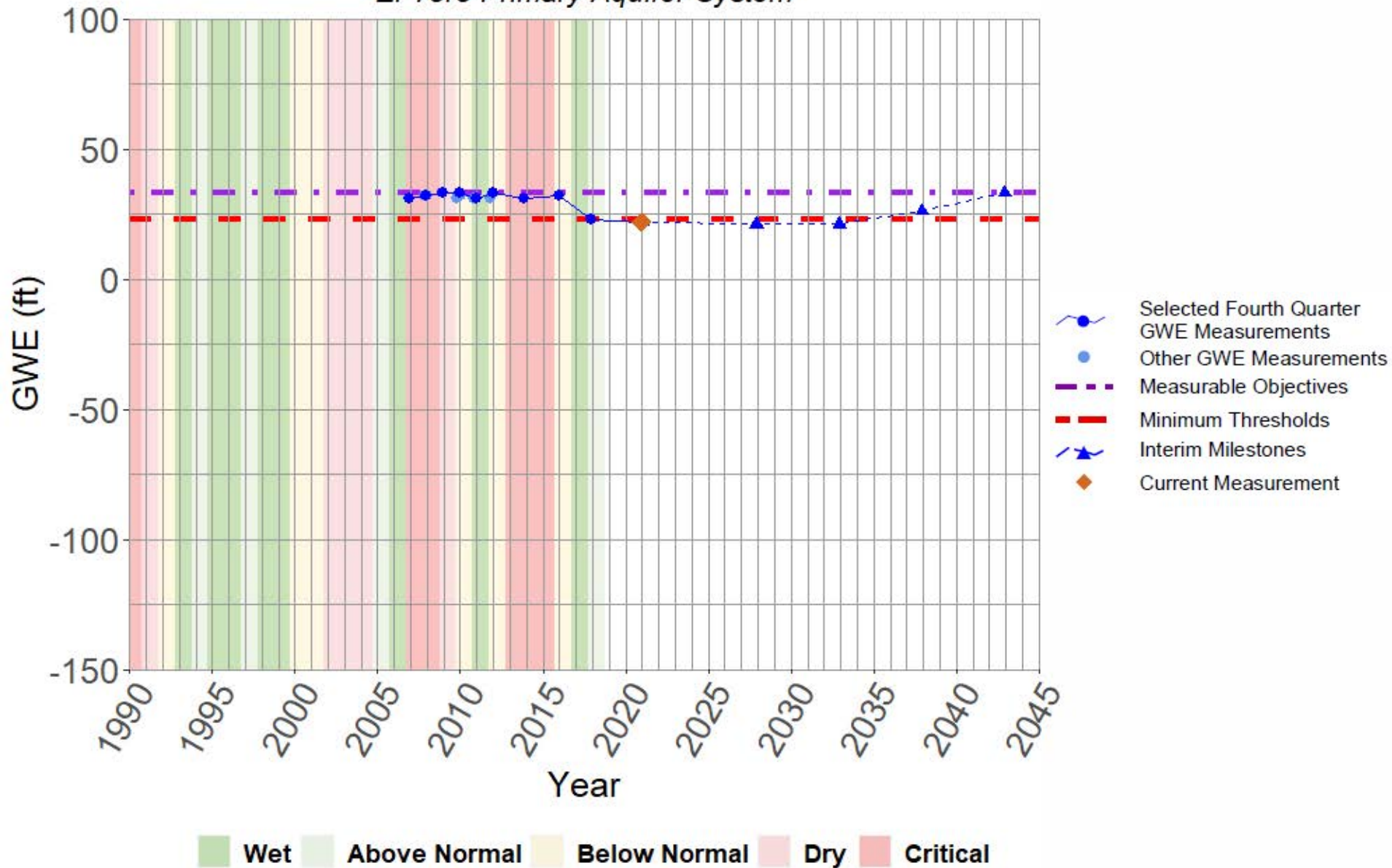
Sentinel MW #1

Deep Aquifers



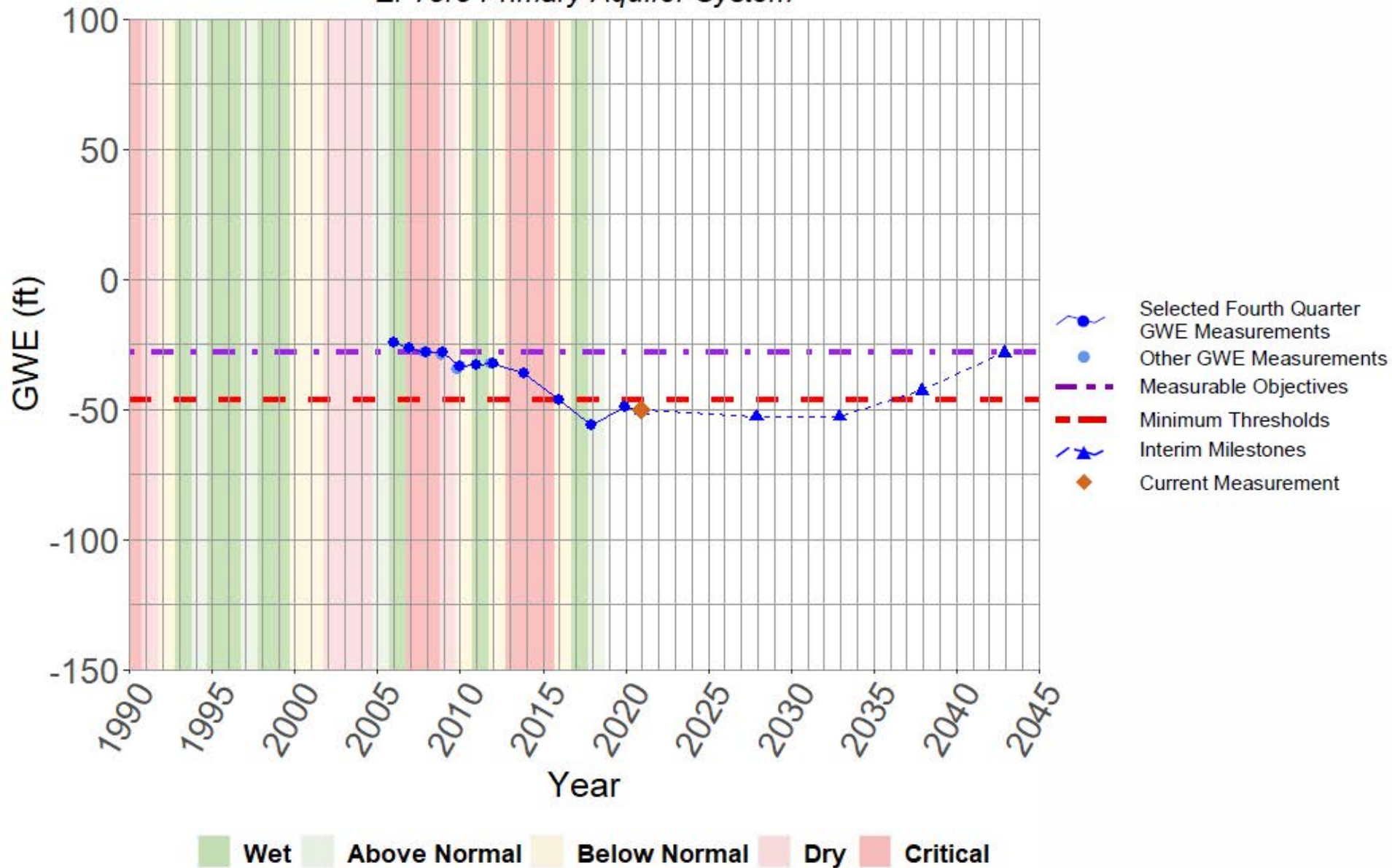
15S02E25C01

El Toro Primary Aquifer System



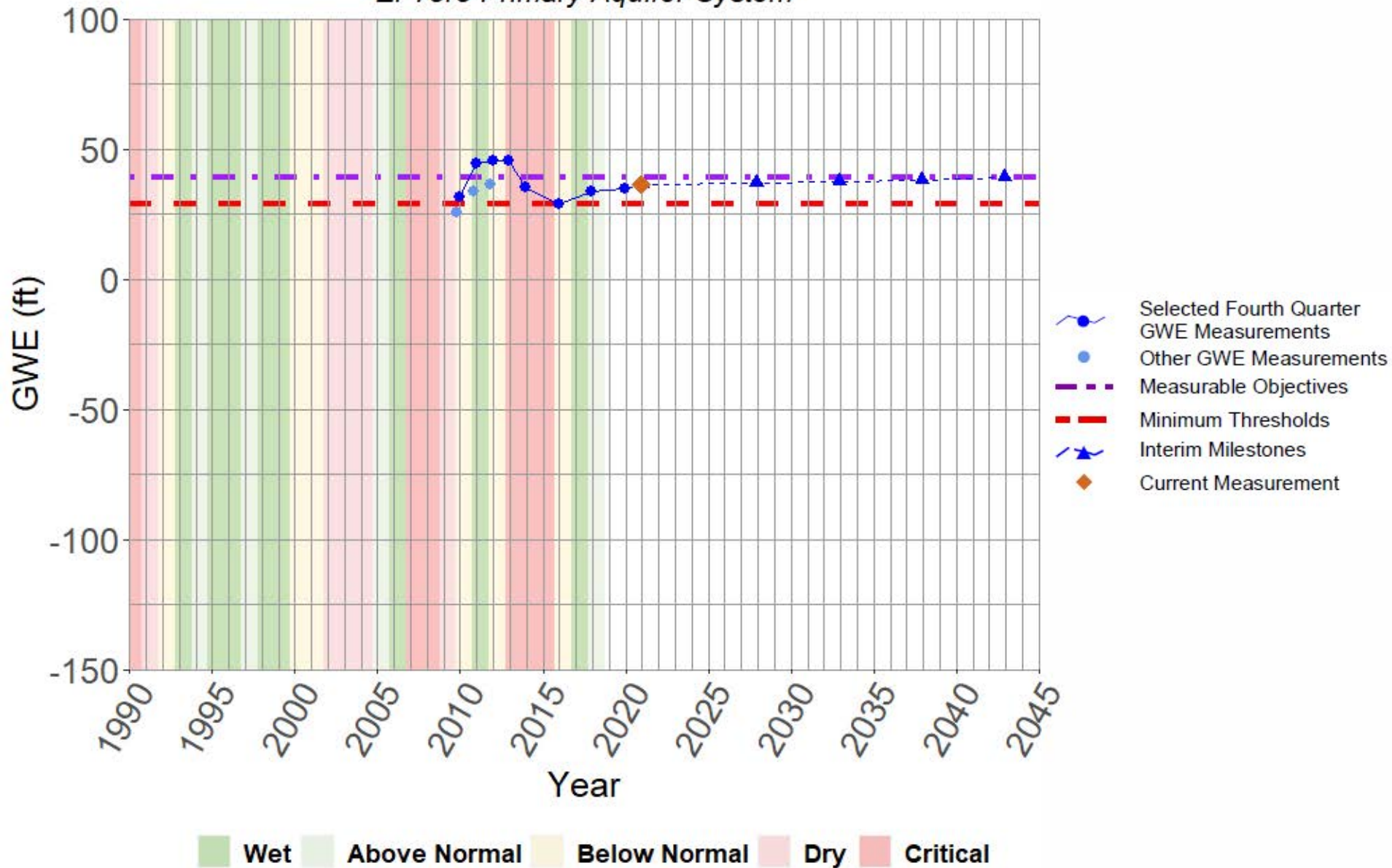
15S03E18P01

El Toro Primary Aquifer System



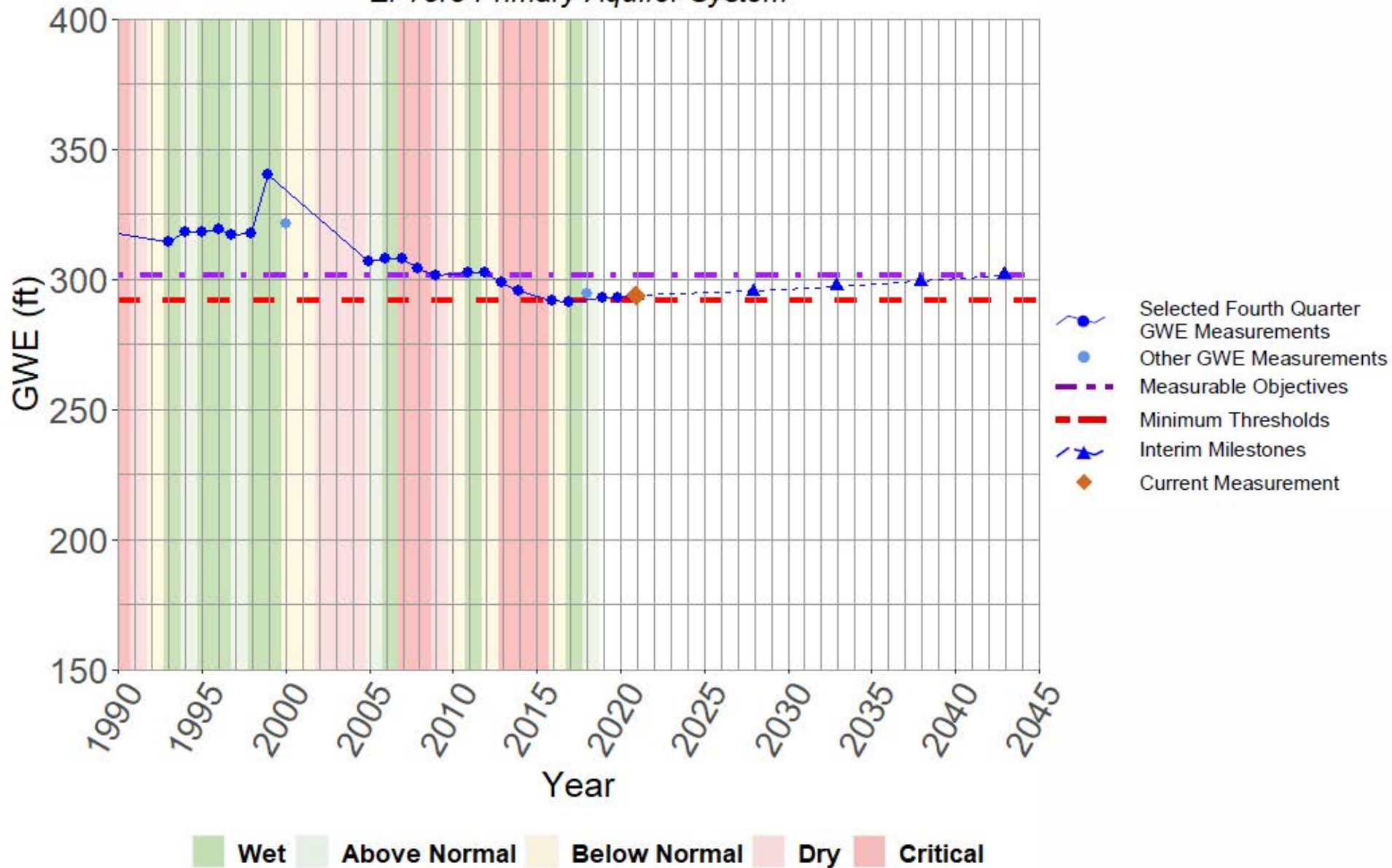
15S03E20R50

El Toro Primary Aquifer System



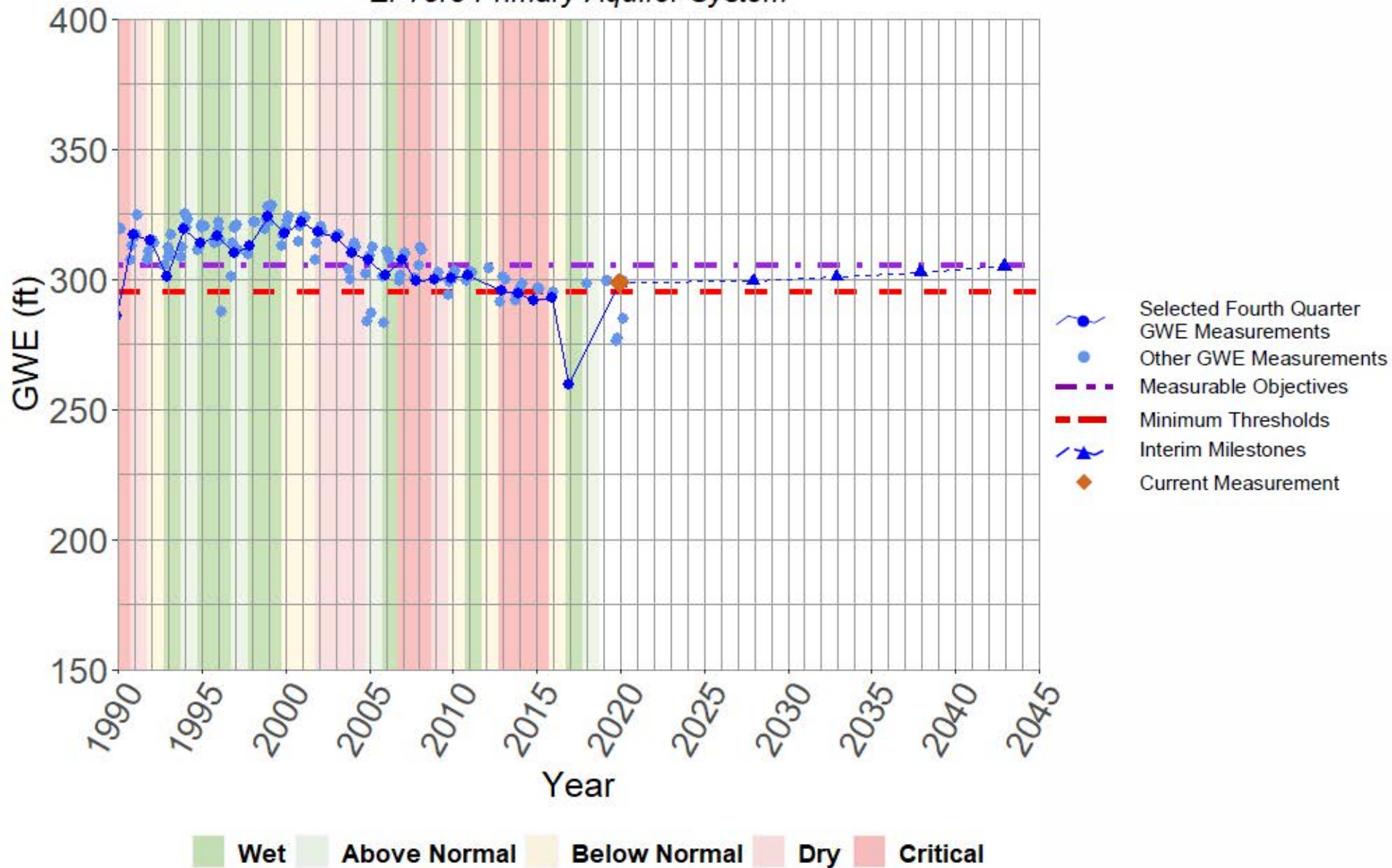
16S02E01M01

El Toro Primary Aquifer System



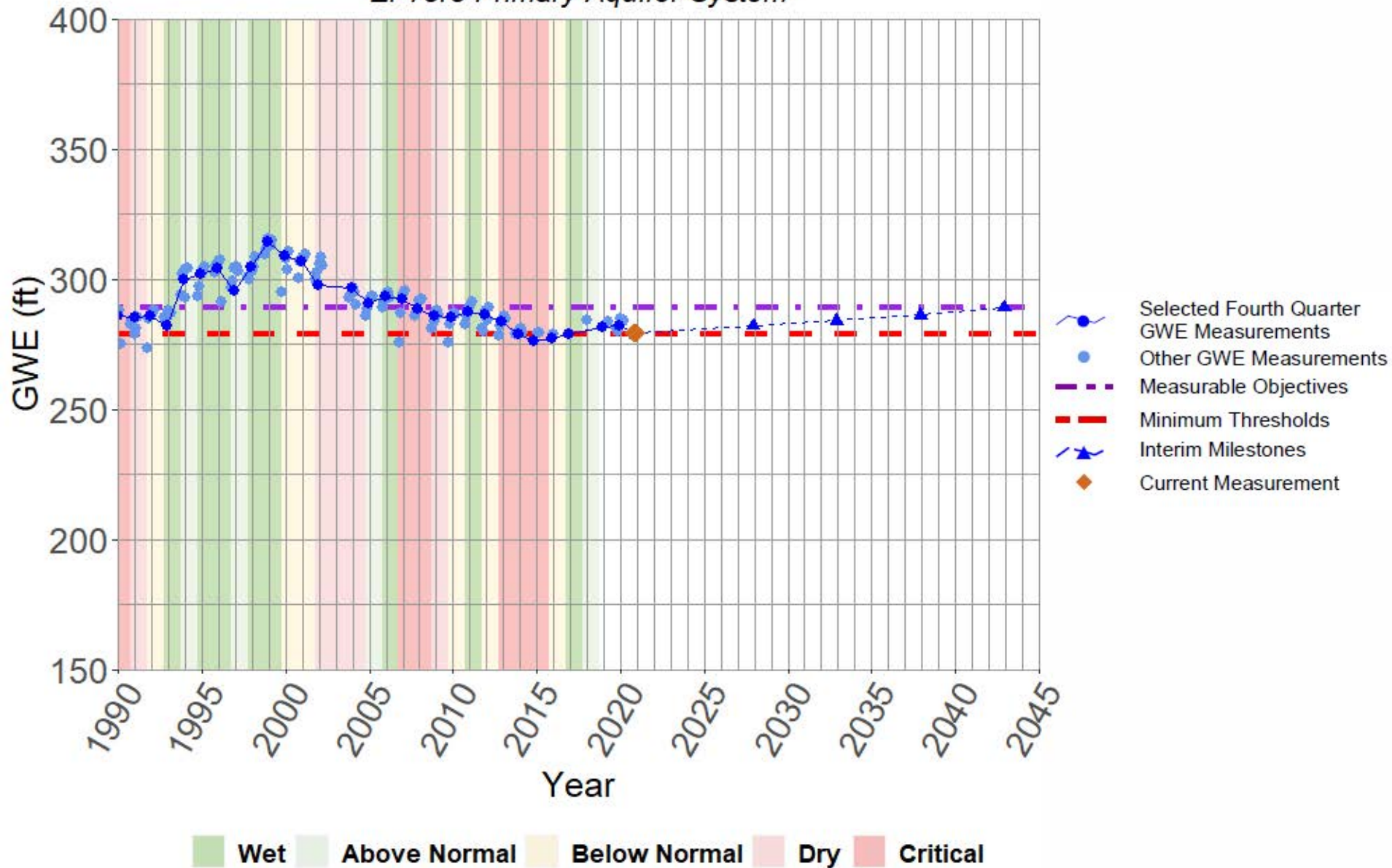
16S02E02G01

El Toro Primary Aquifer System



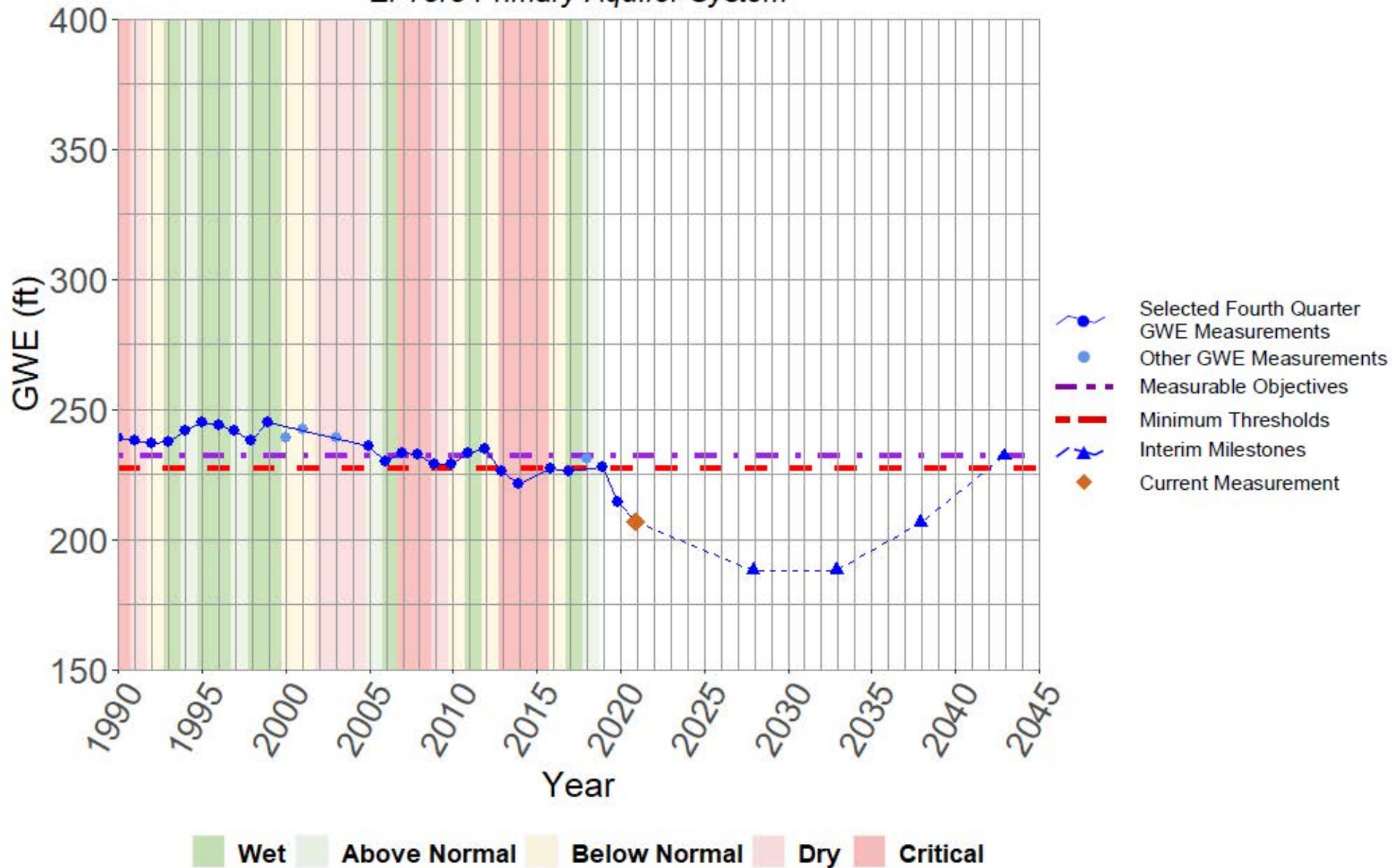
16S02E02H01

El Toro Primary Aquifer System



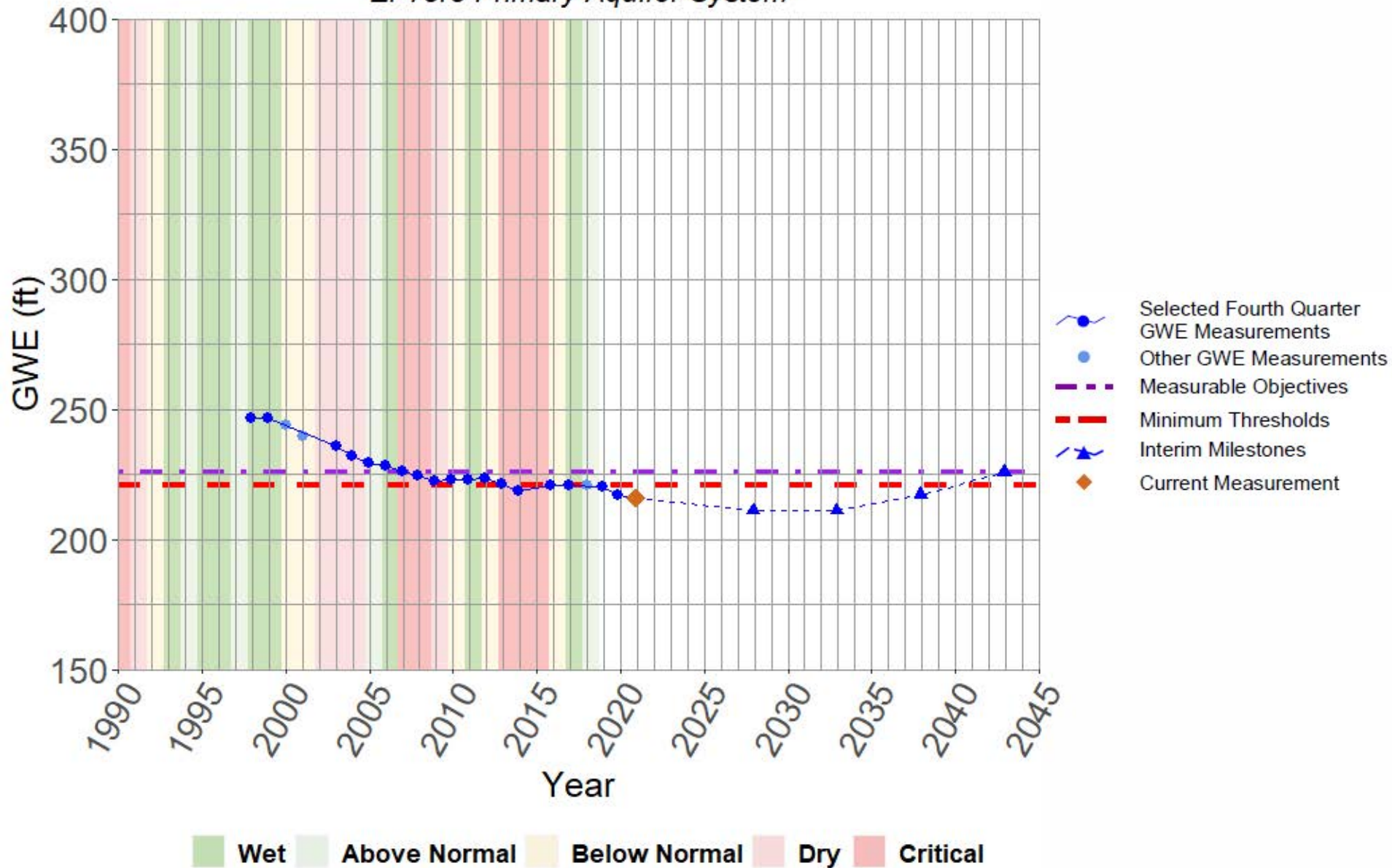
16S02E03A01

El Toro Primary Aquifer System



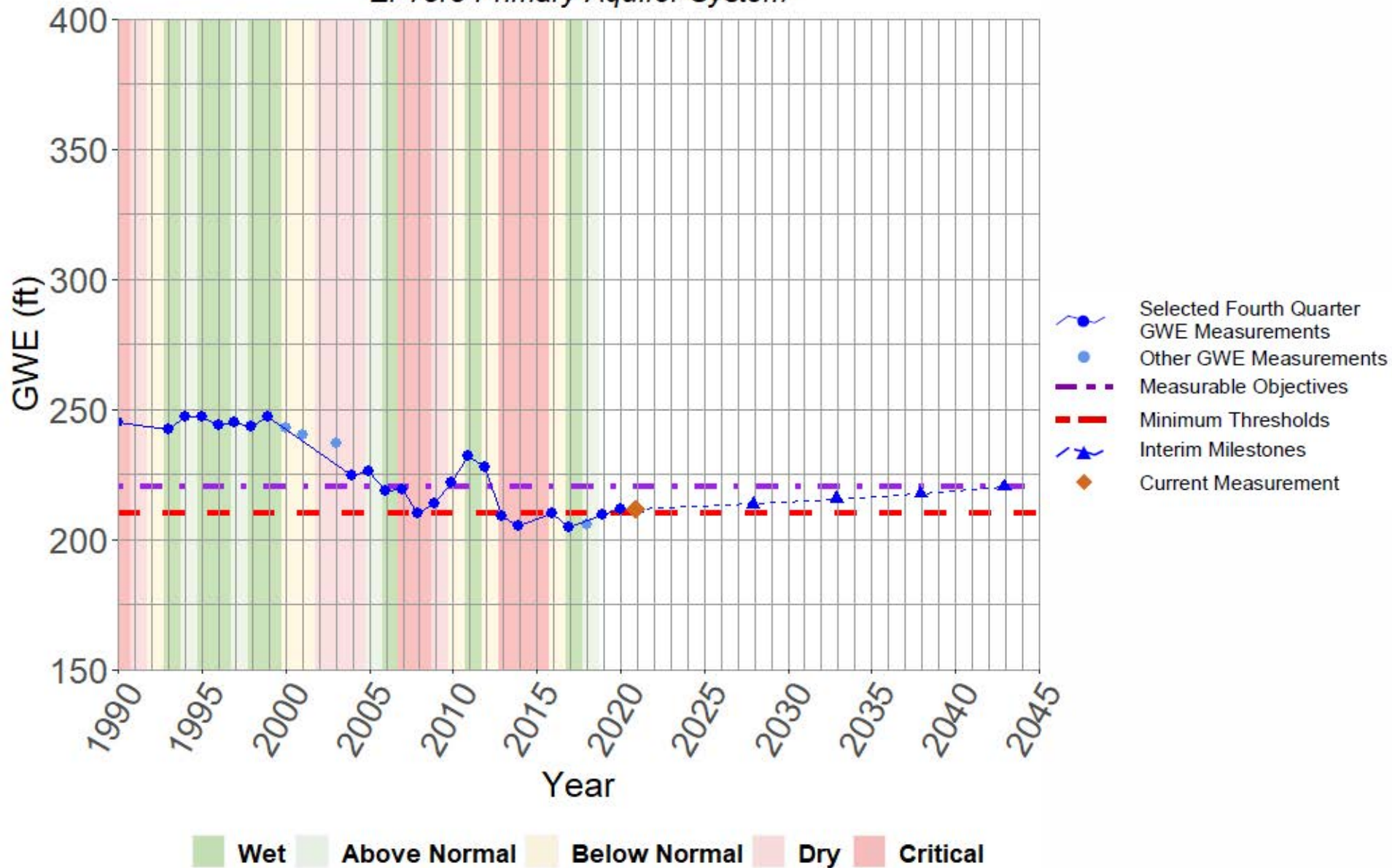
16S02E03F50

El Toro Primary Aquifer System



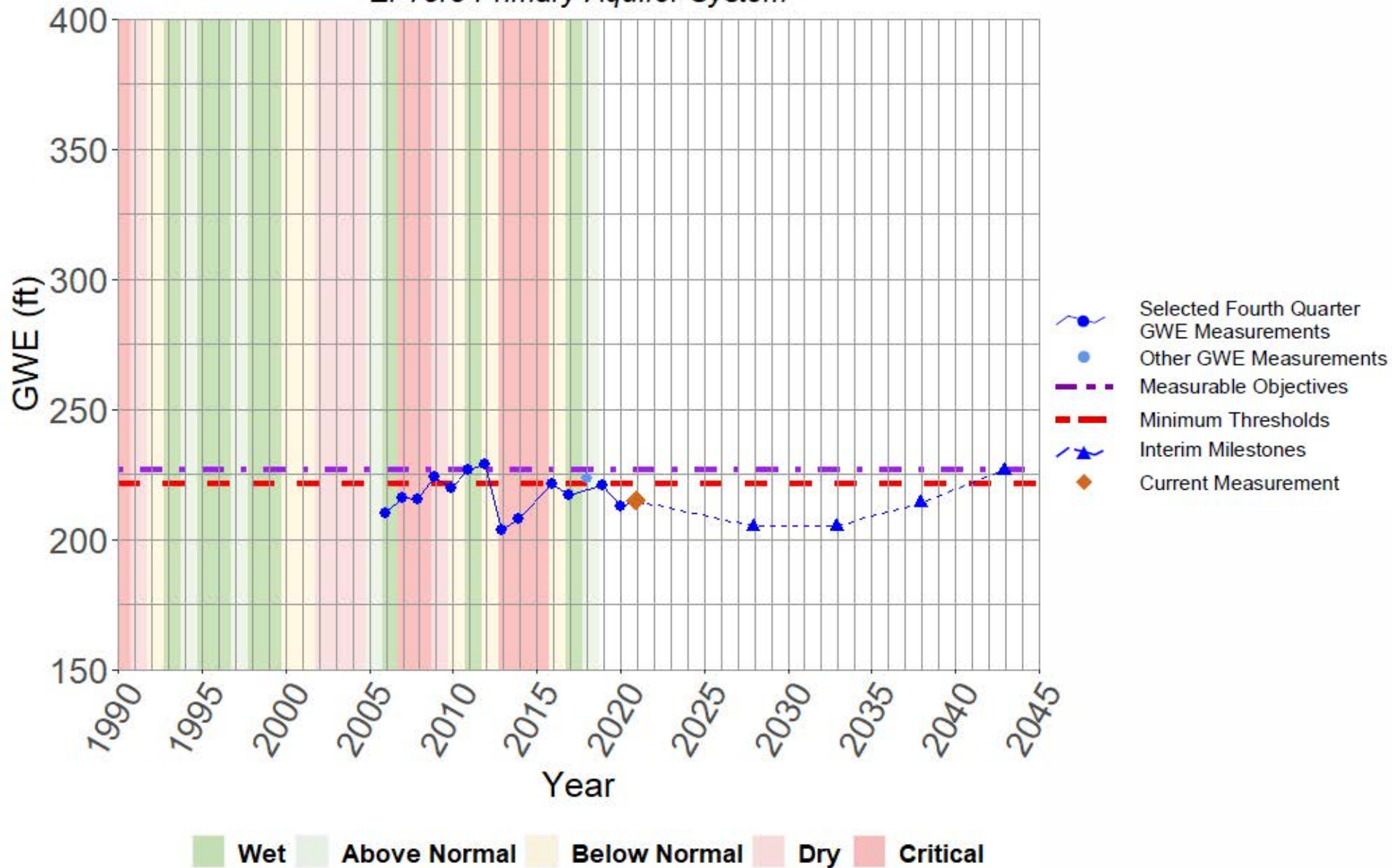
16S02E03H01

El Toro Primary Aquifer System



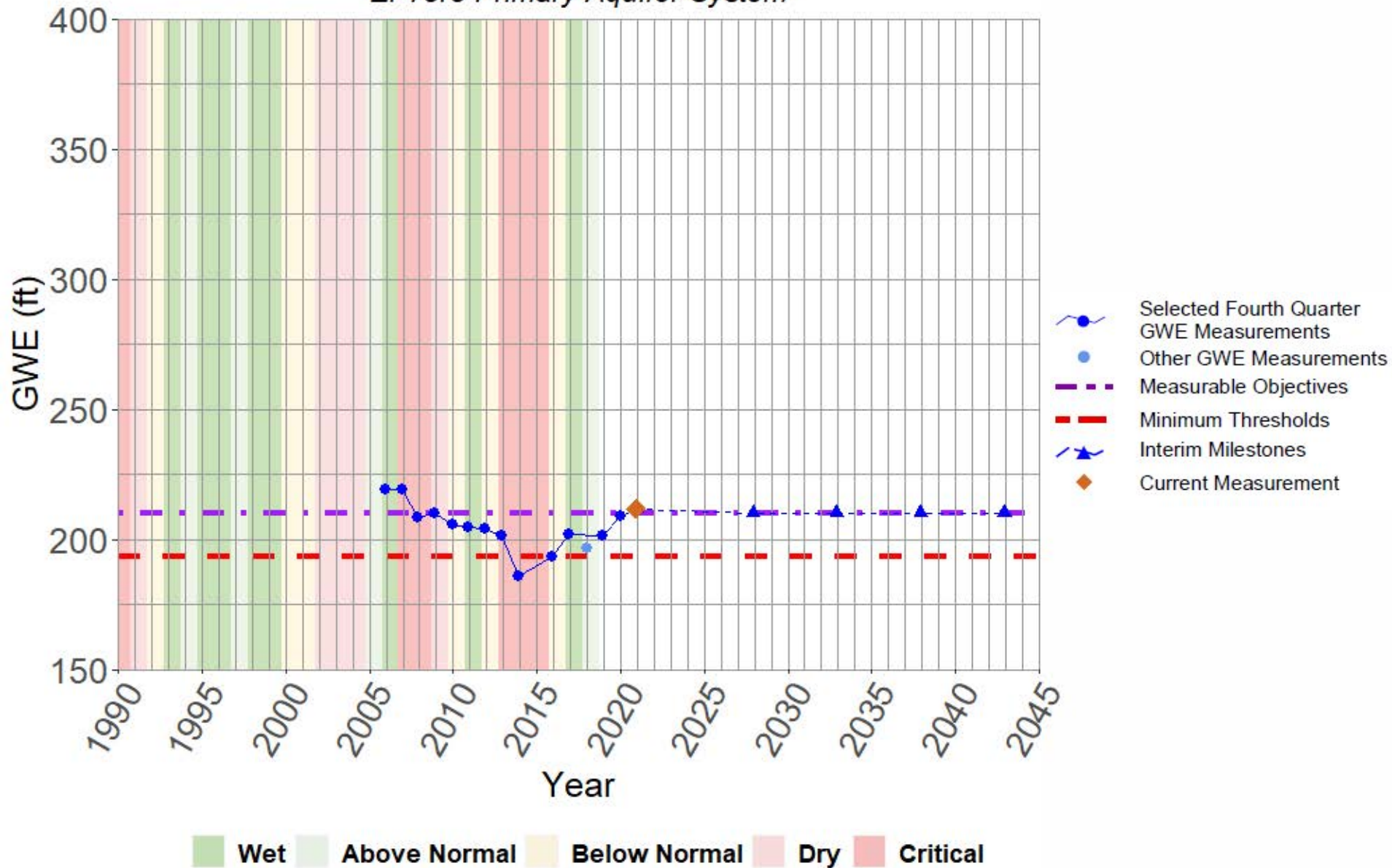
16S02E03H02

El Toro Primary Aquifer System



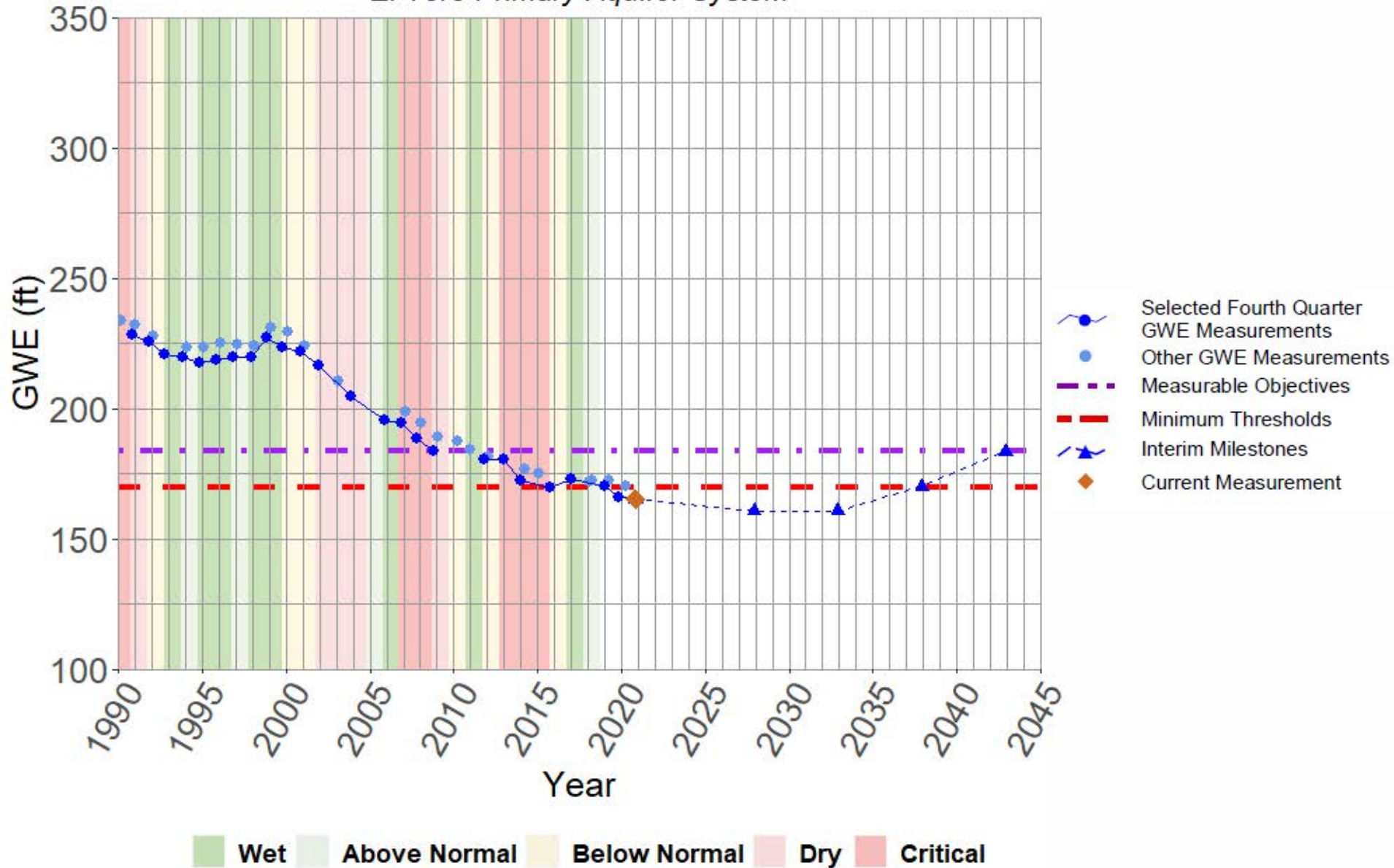
16S02E03J50

El Toro Primary Aquifer System



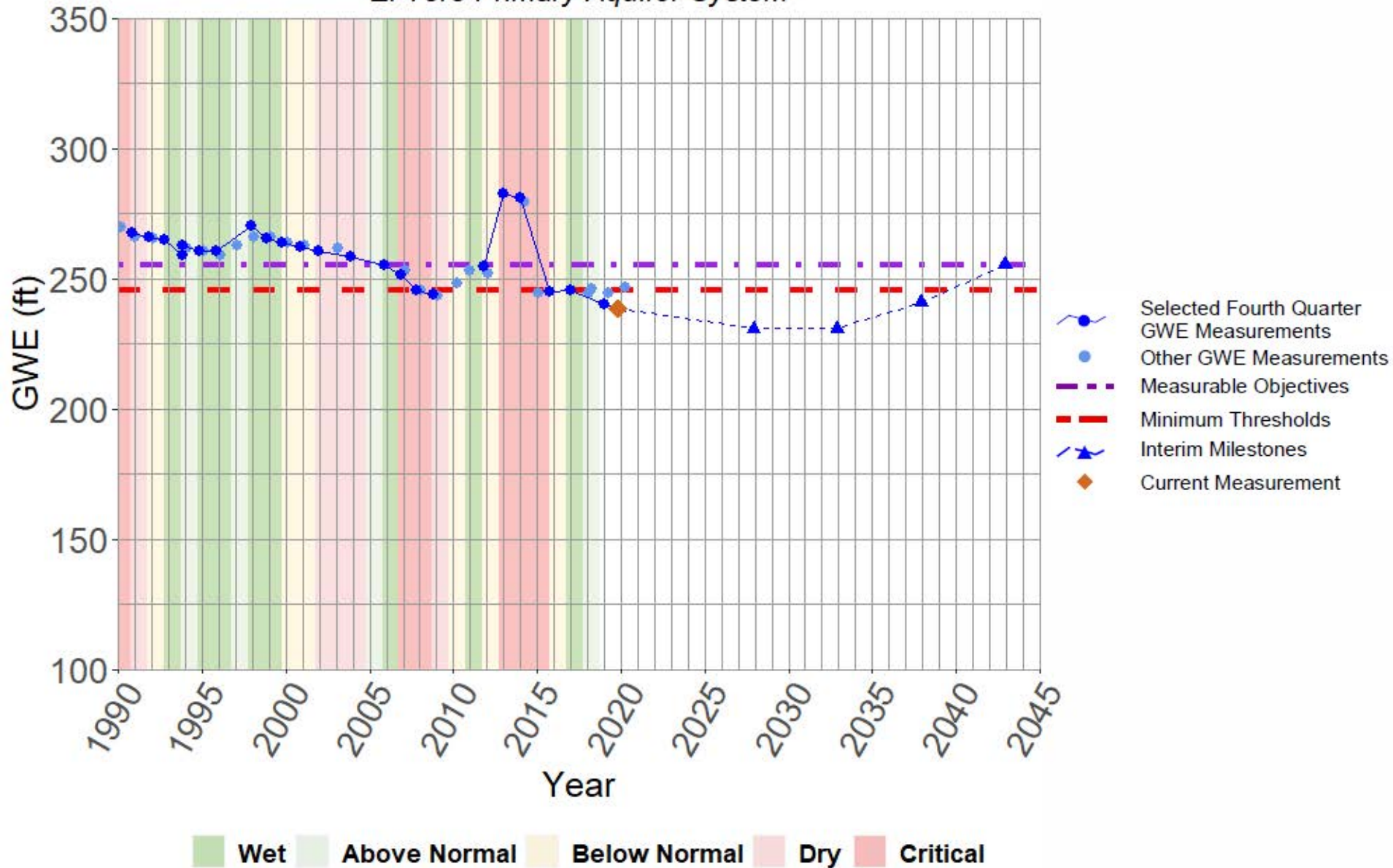
Robley Deep (South)

El Toro Primary Aquifer System



Robley Shallow (North)

El Toro Primary Aquifer System



Appendix 9A

Detailed Cost Estimates

R1 - Winter Release with ASR and Direct Delivery

**Capital and Annualized Costs
Winter Release with ASR
(Preliminary Cost Estimate)**

Line No.	Description		Units		Total
1	Project Yield		acre-feet per year		12,900
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		\$		\$181,134,000
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		\$		\$14,170,000
7	Annual O&M Cost		\$		\$5,223,000
8	Total Annualized Cost		\$		\$19,393,000
9	Unit Cost		\$/AF		\$1,500
CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	180' Aquifer ASR Well Construction	8	EA	\$765,000	\$6,120,000
11	400' Aquifer ASR Well Construction	8	EA	\$1,530,000	\$12,240,000
12	Well Pumps, Motors, & Wellhead Infrastructure	16	EA	\$440,000	\$7,040,000
13	Electrical and Instrumentation	1	LS	\$1,056,000	\$1,056,000
14	Percolation Basins, Site Civil Work	16	25%	\$191,300	\$3,060,800
15	Land Access	21	AC	\$45,000	\$945,000
16	Distribution Pipeline (4 mile)	21,120	LF	\$650	\$13,728,000
17	Filtration and Disinfection System	1	LS	\$70,000,000	\$70,000,000
18	Sub Total				\$114,189,800
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
19	General Conditions			15%	\$17,128,500
20	Contractor Overhead and Profit			18%	\$20,554,200
21	Sales Tax			8.75%	\$2,997,500
22	Engineering, Legal, Administrative, Contingencies			20%	\$22,838,000
23	Bonds and Insurance			3%	\$3,425,700
24	Total Capital Cost				\$181,134,000
OPERATIONS AND MAINTENANCE					
Line No.	Description	Quantity	Unit	Unit Cost	Total Cost
25	Power	1	LS	\$1,607,300	\$1,607,300
26	Treatment	1	LS	\$548,000	\$548,000
27	Equipment Repair & Replacement	1	LS	\$864,000	\$864,000
28	Operations Labor	1	LS	\$729,600	\$729,600
29	Miscellaneous	1	LS	\$603,900	\$603,900
30	Contingency			20%	\$870,600
31	Total O&M Annual Cost				\$5,223,000

NOTES:

1. "Project Yield" based on: 49 CFS (22,000 GPM) and 36% facility up time, reflecting winter operation.
2. "Facility Life" selected based on 25-yr anticipated life of extraction wells.
3. "Interest Rate" selected within expected range for public-financing options.
4. "Capital Cost" based on: construction of 8 ASR wells in the 180-Foot Aquifer, 8 ASR wells in the 400-Foot Aquifer. Construction of a 23 MGD filtration/disinfection system for treating winter surface water flows prior to injection.
5. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate.
6. "Annual O&M Cost" includes well and treatment facilities.

Conceptual Cost Estimate
Project R1 Winter Release from Reservoirs - Direct Delivery

Description	Quantity	Units	Unit Cost	Total	Basis for Cost
Capital Costs					
Surface Water Treatment Plant	1	LS	\$19,480,000	\$ 19,480,000	For this project, MCWD would fund a portion of the overall infrastructure costs according to their share of the overall flow through a regional treatment plant. The overall infrastructure costs for a 23 MGD treatment plant was assumed under the ASR component for \$70 million. MCWD's share of such a facility is assumed to be 6.4 MGD to produce 3,600 AFY of treated water, so the overall cost was converted to a \$/AF unit cost and was used to estimate MCWD's portion of the cost. Rounded up to the nearest \$10,000.
Piping from Salinas River Diversion to SWTP at Armstrong Ranch	6,000	LF	\$310	\$ 1,860,000	20-inch diameter pipeline at \$12/in-diameter foot plus 30% for various appurtenances (\$310/LF). Rounded up to the nearest \$10,000.
Piping from SWTP to MCWD Distribution System	10,000	LF	\$310	\$ 3,100,000	20-inch diameter pipeline at \$12/in-diameter foot plus 30% for various appurtenances (\$310/LF). Rounded up to the nearest \$10,000.
Total Direct Costs				\$ 24,440,000	
Contingency on Infrastructure Costs	30	%	\$24,440,000	\$ 7,332,000	Based on a Class 5 level estimate for conceptual cost estimates (AACEI, 2019).
Soft Costs: Planning, Environmental, Permitting, Engineering, Legal, Mitigation, etc.	30	%	\$31,772,000	\$ 9,531,600	Assumes 30% of capital costs
Contingency for Regional Coordination	5	%	\$31,772,000	\$ 1,588,600	An additional 5% contingency was added to account for coordination with regional stakeholders that would be involved in this project.
Capital Costs Subtotal (rounded up to nearest \$100,000)				\$ 42,900,000	
Annualized over 25 year period at 6% interest				\$ 3,355,926	
Operating Costs					
Annual Operating Costs for SWTP	1	LS	\$ 500,000	\$ 500,000	For this project, MCWD would fund a portion of the operating costs according to their share of the overall flow through a regional treatment plant. Operating costs for a 23 MGD treatment plant was assumed under the ASR component. MCWD's share of such a facility is assumed to be 6.4 MGD to produce 3,600 AFY of treated water, so the overall cost was converted to a \$/AF unit cost and was used to estimate MCWD's portion of the cost. Rounded up to the nearest \$10,000.
Annual Operating and Overhead Cost Subtotal				\$ 500,000	
Total Costs					
Total Annualized Cost				\$ 3,860,000	per year over 25 years. Rounded up to nearest \$10,000
Total 25-Year Average Cost Per Acre-Foot (3,600 AFY)				\$ 1,100	per acre-foot. Rounded up to nearest \$100

Abbreviations:

AFY: acre feet per year	LS: lump sum
ASR: Aquifer Storage and Recovery	MCWD: Marina Coast Water District
EA: each	SWTP: surface water treatment plant
LF: lineal foot	

References

AACEI, 2019. *Recommended Practices and Standards* , Association for the Advancement of Cost Engineering International, March 2019 Update.

R2 - Regional Municipal Supply

**Capital and Annualized Costs
Regional Alternative Water Supply Project
(Preliminary Cost Estimate)**

Line No.	Description		Units		Total
1	Project Yield		acre-feet per year		15,000
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		\$		\$309,387,000
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		\$		\$24,203,300
7	Annual O&M Cost		\$		\$11,874,000
8	Total Annualized Cost		\$		\$36,077,300
9	Unit Cost		\$/AFY		\$2,405
CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	SWRO Facility	13	MGD	\$14,000,000	\$182,000,000
11	Source Water Pipeline	58,080	LF	\$400	\$23,232,000
12	Subtotal				\$205,232,000
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
13	General Conditions			15%	\$30,784,800
14	Contractor Overhead and Profit			18%	\$36,941,800
15	Sales Tax			8.75%	\$17,957,800
16	Engineering, Legal, Administrative, Contingencies			20%	\$12,313,900
17	Bonds and Insurance			3%	\$6,157,000
18	Total Capital Cost				\$309,387,000
OPERATIONS AND MAINTENANCE					
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
19	Desalination O&M	13	MGD	\$913,400	\$11,874,200
1	Total O&M Annual Cost				\$11,874,000

NOTES:

1. "Facility Life" selected based on 25-yr anticipated life of extraction wells.
2. "Interest Rate" selected within expected range for public-financing options.
3. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate.

Capital and Annualized Costs
Regional Alternative Water Supply Project
(Preliminary Cost Estimate)

Line No.	Description		Units		Total
1	Project Yield		acre-feet per year		15,000
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		\$		\$65,257,000
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		\$		\$5,105,100
7	Annual O&M Cost		\$		\$1,318,000
8	Total Annualized Cost		\$		\$6,423,100
9	Unit Cost		\$/AFY		\$428
CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	Mobilization/Demobilization	1	LS	\$2,061,345	\$2,061,345
11	Environmental and Stormwater	1	LS	\$3,747,900	\$3,747,900
12	Pipeline to Salinas	52,700	LF	\$400	\$21,080,000
13	Pipeline to Salinas Hills	39,100	LF	\$300	\$11,730,000
14	Distribution Pump Station	11.6	MGD	\$350,000	\$4,060,000
15	Electrical, I&C	1	LS	\$609,000	\$609,000
16	Subtotal				\$43,288,245
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
17	General Conditions			15%	\$6,493,200
18	Contractor Overhead and Profit			18%	\$7,791,900
19	Sales Tax			8.75%	\$3,787,700
20	Engineering, Legal, Administrative, Contingencies			20%	\$2,597,300
21	Bonds and Insurance			3%	\$1,298,600
22	Total Capital Cost				\$65,257,000
OPERATIONS AND MAINTENANCE					
Line No.	Description	Quantity	Unit	Unit Cost	Total Cost
23	Power	1	LS	\$664,780.25	\$664,780
24	Labor	1	LS	\$180,000	\$180,000
25	Equipment Repair & Replacement	1	LS	\$168,956	\$168,956
26	Contingency			30%	\$304,100
27	Total O&M Annual Cost				\$1,318,000

NOTES:

1. "Facility Life" selected based on 25-yr anticipated life of extraction wells.
2. "Interest Rate" selected within expected range for public-financing options.

Capital and Annualized Costs
Regional Alternative Water Supply Project
(Preliminary Cost Estimate)

Line No.	Description		Units		Total
1	Project Yield		acre-feet per year		15,000
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		\$		\$70,623,000
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		\$		\$5,524,800
7	Annual O&M Cost		\$		\$1,458,000
8	Total Annualized Cost		\$		\$6,982,800
9	Unit Cost		\$/AFY		\$466
CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	Mobilization/Demobilization	1	LS	\$2,090,124	\$2,090,124
11	Environmental and Stormwater	1	LS	\$3,800,225	\$3,800,225
12	Pipeline to Salinas	52,700	LF	\$400	\$21,080,000
13	Pipeline to Salinas Hills	39,100	LF	\$300	\$11,730,000
14	Pipeline to Marina	9,850	LF	\$300	\$2,955,000
15	Distribution Pump Station	12.9	MGD	\$350,000	\$4,515,000
16	Electrical, I&C	1	LS	\$677,250	\$677,250
17	Subtotal				\$46,847,599
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
18	General Conditions			15%	\$7,027,100
19	Contractor Overhead and Profit			18%	\$8,432,600
20	Sales Tax			8.75%	\$4,099,200
21	Engineering, Legal, Administrative, Contingencies			20%	\$2,810,900
22	Bonds and Insurance			3%	\$1,405,400
23	Total Capital Cost				\$70,623,000
OPERATIONS AND MAINTENANCE					
Line No.	Description	Quantity	Unit	Unit Cost	Total Cost
24	Power	1	LS	\$742,310.45	\$742,310
25	Labor	1	LS	\$192,000	\$192,000
26	Equipment Repair & Replacement	1	LS	\$186,862	\$186,862
27	Contingency			30%	\$336,400
28	Total O&M Annual Cost				\$1,458,000

NOTES:

1. "Facility Life" selected based on 25-yr anticipated life of extraction wells.
2. "Interest Rate" selected within expected range for public-financing options.

Capital and Annualized Costs
Regional Alternative Water Supply Project
(Preliminary Cost Estimate)

Line No.	Description		Units		Total
1	Project Yield		acre-feet per year		15,000
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		\$		\$84,315,000
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		\$		\$6,596,000
7	Annual O&M Cost		\$		\$1,515,000
8	Total Annualized Cost		\$		\$8,111,000
9	Unit Cost		\$/AFY		\$541
CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	Mobilization/Demobilization	1	LS	\$2,101,193	\$2,101,193
11	Environmental and Stormwater	1	LS	\$3,820,350	\$3,820,350
12	Pipeline to Salinas	52,700	LF	\$400	\$21,080,000
13	Pipeline to Salinas Hills	39,100	LF	\$300	\$11,730,000
14	Pipeline to Marina	9,850	LF	\$300	\$2,955,000
15	Pipeline to Castroville	29,500	LF	\$300	\$8,850,000
16	Distribution Pump Station	13.4	MGD	\$350,000	\$4,690,000
17	Electrical, I&C	1	LS	\$703,500	\$703,500
18	Subtotal				\$55,930,043
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
19	General Conditions			15%	\$8,389,500
20	Contractor Overhead and Profit			18%	\$10,067,400
21	Sales Tax			8.75%	\$4,893,900
22	Engineering, Legal, Administrative, Contingencies			20%	\$3,355,800
23	Bonds and Insurance			3%	\$1,677,900
24	Total Capital Cost				\$84,315,000
OPERATIONS AND MAINTENANCE					
Line No.	Description	Quantity	Unit	Unit Cost	Total Cost
25	Power	1	LS	\$767,054.14	\$767,054
26	Labor	1	LS	\$204,000	\$204,000
27	Equipment Repair & Replacement	1	LS	\$194,211	\$194,211
28	Contingency			30%	\$349,600
29	Total O&M Annual Cost				\$1,515,000

NOTES:

1. "Facility Life" selected based on 25-yr anticipated life of extraction wells.
2. "Interest Rate" selected within expected range for public-financing options.
3. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate.

R3 - Multi-benefit Stream Channel Improvements

Multi-benefit stream channel improvements

Component 2

RCD Arundo Eradication Cost Estimate

Five-year cost for treating arundo (includes three herbicide treatments and mowing or hand-cutting if applicable)

Work activity	Cost/acre for arundo control contractor	Cost/acre for biomonitoring	Cost/acre for biological surveys	Cost/acre for RCD program administration	Total Cost/acre	Estimated acres remaining	Total Cost (Low Estimate)	Total Cost (High Estimate)
Mowed arundo	\$ 10,350.00	\$ 356.04	\$ 2,127.50	\$ 2,495.50	\$ 15,329.04	700	\$ 10,730,328.00	\$ 13,949,426.40
Unmowed arundo	\$ 7,475.00	\$ 349.60	\$ 1,322.50	\$ 1,759.50	\$ 10,906.60	150	\$ 1,635,990.00	\$ 2,126,787.00
Hand-cut arundo	\$ 34,500.00	\$ 2,300.00	\$ 2,875.00	\$ 3,737.50	\$ 43,412.50	50	\$ 2,170,625.00	\$ 2,821,812.50
Est. cost of initial + retreatment							\$ 14,536,943.00	\$ 18,898,025.90

Cost of O&M

WCS completed treatment on approximately 21 river miles in 2020	\$151,599.00
Cost per river mile of 2020 treatment	\$7,219.00
Cost per river mile rounded up	\$7,500.00
*Cost includes biological surveys and monitoring	
*90 miles of river in Monterey County	
Cost for retreating whole river 1 time	\$675,000.00
Cost to re-treat equivalent of whole river five times over 25 years	\$3,375,000.00
Cost of helicopter survey to re-map arundo over whole river	\$400,000.00
RCD admin costs @ 20% of contractor cost	\$755,000.00
Total cost for O&M	\$4,130,000.00
Average annual cost (total cost/25 years)	\$165,200.00

Capital and Annualized Costs
Multi-Benefit Stream Channel Improvement - Component 2 - Low Estimate
(Preliminary Cost Estimate)

SUMMARY					
Line No.	Description		Units		Total
1	Project Yield (high estimate)		acre-feet per year		20,880
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		\$		\$14,536,943
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		\$		\$1,100,000
7	Annual O&M Cost		\$		\$165,200
8	Total Annualized Cost		\$		\$1,265,200
9	Unit Cost		\$/AFY		\$60
CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	Mowed arundo	700	Acres	\$15,329	\$10,730,328
11	Unmowed arundo	150	Acres	\$10,907	\$1,635,990
12	Hand-cut arundo	50	Acres	\$43,413	\$2,170,625
13	Subtotal				\$14,536,943
OPERATIONS AND MAINTENANCE					
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
16	O&M Estimate	1	LS	\$165,200	\$165,200
17	Total O&M Cost				\$165,200

NOTES:

1. "Project Yield" based on: Range of 6,000 to 36,000 AF, assumed an average of 20,000 AF
2. "Facility Life" selected based on 25-yr anticipated life of facilities.
3. "Interest Rate" selected within expected range for public-financing options.
4. "Capital Cost" based on: Phase I and Phase II.
5. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate.
6. "Annualized Capital Cost" based on facility life and interest rate.
7. "Annual O&M Cost" estimate based on average annual needs for on going monitoring and maintenance (chemical treatment every 3 to 5 years).

Capital and Annualized Costs
Multi-Benefit Stream Channel Improvement - Component 2 - High Estimate
(Preliminary Cost Estimate)

SUMMARY					
Line No.	Description		Units		Total
1	Project Yield (low estimate)		acre-feet per year		2,790
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		\$		\$18,898,026
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		\$		\$1,500,000
7	Annual O&M Cost		\$		\$165,200
8	Total Annualized Cost		\$		\$1,665,200
9	Unit Cost		\$/AFY		\$600
CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	Mowed arundo	700	Acres	\$19,928	\$13,949,426
11	Unmowed arundo	150	Acres	\$14,179	\$2,126,787
12	Hand-cut arundo	50	Acres	\$56,436	\$2,821,813
13	Subtotal				\$18,898,026
OPERATIONS AND MAINTENANCE					
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
16	O&M Estimate	1	LS	\$165,200	\$165,200
17	Total O&M Cost				\$165,200

NOTES:

1. "Project Yield" based on: Range of 6,000 to 36,000 AF, assumed an average of 20,000 AF
2. "Facility Life" selected based on 25-yr anticipated life of facilities.
3. "Interest Rate" selected within expected range for public-financing options.
4. "Capital Cost" based on: Phase I and Phase II.
5. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate.
6. "Annualized Capital Cost" based on facility life and interest rate.
7. "Annual O&M Cost" estimate based on average annual needs for on going monitoring and maintenance (chemical treatment every 3 to 5 years).

Component 3

Capital and Annualized Costs
Multi-Benefit Stream Channel Improvements - Component 3
(Preliminary Opinion of Probable Cost)

Line No.	Description		Units		Total
1	Project Yield		acre-feet per year		100
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		\$		\$1,116,000
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		\$		\$87,300
7	Annual O&M Cost		\$		\$6,000
8	Total Annualized Cost		\$		\$93,300
9	Unit Cost		\$/AF		\$930
CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	Mobilization/Demobilization	1	LS	\$52,000	\$52,000
11	Environmental and Stormwater	1	LS	\$103,000	\$103,000
12	Off-Stream Recharge Basin	8.5	AC	\$48,500	\$412,250
13	Land Acquisition	1	AC	\$45,000	\$45,000
14	<i>Subtotal</i>				\$612,250
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
15	Construction Contingency			30%	\$124,000
16	General Conditions			15%	\$92,000
17	Contractor Overhead and Profit			15%	\$92,000
18	Sales Tax			9.25%	\$11,300
19	Engineering, Legal, Administrative, Contingencies			30%	\$184,000
20	Total Capital Cost				\$1,116,000
OPERATIONS AND MAINTENANCE					
Line No.	Description	Quantity	Unit	Unit Cost	Total Cost
21	Detention Basin Maintenance	1	LS	\$4,300	\$4,300
22	Contingency			30%	\$1,300
23	Total O&M Cost				\$6,000

NOTES:

1. "Project Yield" based on: Assumed 100 acre-feet per year.
2. "Facility Life" selected based on 25-yr anticipated life of facilities.
3. "Interest Rate" selected within expected range for public-financing options.
4. "Capital Cost" includes land acquisition costs estimated for an area equivalent to 10% of required recharge basin area. Recharge basin unit cost assumes inclusion of site civil earthwork and access road improvements. Environmental and stormwater requirements are estimate at 15% of capital base costs for off-stream basins.
5. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate.
6. "Annualized Capital Cost" based on facility life and interest rate.

Capital and Annualized Costs
Winter Releases from Reservoirs, with Aquifer Storage and Recovery in the 180/400-Foot Aquifer Subbasin
(Preliminary Cost Estimate)

Line No.	Description		Units		Total
1	Project Yield		acre-feet per year		12,900
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		\$		\$172,141,000
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		\$		\$13,467,000
7	Annual O&M Cost		\$		\$5,223,000
8	Total Annualized Cost		\$		\$18,690,000
9	Unit Cost		\$/AFY		\$1,450
CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	180' Aquifer ASR Well Construction	8	EA	\$765,000	\$6,120,000
11	400' Aquifer ASR Well Construction	8	EA	\$1,530,000	\$12,240,000
12	Well Pumps, Motors, & Wellhead Infrastructure	16	EA	\$440,000	\$7,040,000
13	Electrical and Instrumentation	1	LS	\$1,056,000	\$1,056,000
14	Percolation Basins, Site Civil Work	16	25%	\$191,300	\$3,060,800
15	Land Access	21	AC	\$45,000	\$945,000
16	Distribution Pipeline (4 mile)	21,120	LF	\$650	\$13,728,000
17	Filtration and Disinfection System	1	LS	\$70,000,000	\$70,000,000
18	SubTotal				\$114,189,800
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
19	General Conditions			15%	\$17,128,500
20	Contractor Overhead and Profit			18%	\$20,554,200
21	Sales Tax			8.75%	\$9,991,600
22	Engineering, Legal, Administrative, Contingencies			20%	\$6,851,400
23	Bonds and Insurance			3%	\$3,425,700
24	Total Capital Cost				\$172,141,000
OPERATIONS AND MAINTENANCE					
Line No.	Description	Quantity	Unit	Unit Cost	Total Cost
25	Power	1	LS	\$1,607,300	\$1,607,300
26	Treatment	1	LS	\$548,000	\$548,000
27	Equipment Repair & Replacement	1	LS	\$864,000	\$864,000
28	Operations Labor	1	LS	\$729,600	\$729,600
29	Miscellaneous	1	LS	\$603,900	\$603,900
30	Contingency			20%	\$870,600
31	Total O&M Annual Cost				\$5,223,000

NOTES:

1. "Project Yield" based on: 49 CFS (22,000 GPM) and 36% facility up time, reflecting winter operation.
2. "Facility Life" selected based on 25-yr anticipated life of extraction wells.
3. "Interest Rate" selected within expected range for public-financing options.
4. "Capital Cost" based on: construction of 8 ASR wells in the 180-Foot Aquifer, 8 ASR wells in the 400-Foot Aquifer. Construction of a 23 MGD filtration/disinfection system for treating winter surface water flows prior to injection.
5. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate.
6. "Annual O&M Cost" includes well and treatment facilities.

M3 - Recycled Water Reuse Through Landscape Irrigation and Indirect Potable Reuse

Conceptual Cost Estimate
Project M3: Recycled Water Reuse Through Landscape Irrigation and Indirect Potable Reuse
AWPF Expansion for Additional 827 AFY Landscape Irrigation

Description	Quantity	Units	Unit Cost	Total	Basis for Cost
Capital Costs (a)					
AWPF Expansion Construction Cost	1	LS	\$3,300,000	\$ 3,300,000	Costs for a 2,250 AFY expansion were presented in M1W Expansion Memo (M1W, 2018) based on a 30% design that was prepared. Costs were revised based on the increase in ENR CCI for San Francisco from February 2018 to October 2019 (approximately 2.9%) and then converted to a \$/AF unit cost. This unit cost was used to estimate MCWD's contribution for a capacity of 827 AFY. Rounded up to the nearest \$10,000.
Recycled Water Distribution System Cost	-	-	-	-	Recycled water distribution system for delivering up to 1,427 AFY of recycled water for landscape irrigation is already under construction and thus not included within this estimate.
<i>Total Direct Costs</i>				\$ 3,300,000	
Contingency on Infrastructure Costs	30	%	\$3,300,000	\$ 990,000	Based on a Class 5 level estimate for conceptual cost estimates (AACEI, 2019).
Soft Costs: Planning, Environmental, Permitting, Engineering, Legal, mitigation, etc.	30	%	\$4,290,000	\$ 1,287,000	Assumes 30% of capital costs
Capital Costs Subtotal (rounded up to nearest \$100,000)				\$ 5,600,000	
Annualized over 25 year period at 6% interest				\$ 438,070	
Operating Costs					
Annual Operating Costs for AWPF Expansion and	1	LS	\$ 690,000	\$ 690,000	Costs for operation of a 2,250 AFY expansion were presented in M1W Expansion Memo (M1W, 2018). Operating costs were converted to a \$/AF unit cost and used to estimate MCWD's share of contribution for a capacity of 827 AFY. Rounded up to the nearest \$10,000.
Annual Overhead costs for AWPF Expansion	1	LS	\$ 120,000	\$ 120,000	Costs for overhead of a 2,250 AFY expansion were presented in M1W Expansion Memo (M1W, 2018). Operating costs were converted to a \$/AF unit cost and used to estimate MCWD's share of contribution for a capacity of 827 AFY. Rounded up to the nearest \$10,000.
Annual Operating and Overhead Cost Subtotal				\$ 810,000	

Total Costs					
Total Annualized Cost				\$ 1,250,000	per year over 25 years. Rounded up to nearest \$10,000
Total 25-Year Average Cost Per Acre-Foot (827 AFY)				\$ 1,600	per acre-foot. Rounded up to nearest \$100

Abbreviations:

AFY: acre feet per year

AWPF: advanced water purification facility

EA: each

ENR CCI: Engineering News-Record Construction Cost Index

gpm: gallons per minute

LF: lineal foot

LS: lump sum

M1W: Monterey One Water

MCWD: Marina Coast Water District

Notes

(a) Increase for general conditions, contractor overhead and profit, and sales tax are included in capital unit costs and thus are not added separately.

References

AACEI, 2019. *Recommended Practices and Standards*, Association for the Advancement of Cost Engineering International, March 2019 Update.

M1W, 2018, *Progress Report on Pure Water Monterey Expansion*, Monterey One Water, 10 May 2018.

Nellor et al, 2019, *Final Engineering Report, Pure Water Monterey Groundwater Replenishment Project*, Nellor Environmental Associates, Trussell Technologies, and Todd Groundwater, April 2019

Conceptual Cost Estimate
Project M3: Recycled Water Reuse Through Landscape Irrigation and Indirect Potable Reuse
2,400 AFY 180/400 Foot Aquifer Injection Alternative

Description	Quantity	Units	Unit Cost	Total	Basis for Cost
Capital Costs (a)					
<i>AWPF Facility Expansion</i>					
AWPF Expansion Construction Cost	1	LS	\$10,930,000	\$ 10,930,000	Costs for a 2,250 AFY expansion were presented in M1W Expansion Memo (M1W, 2018) based on a 30% design that was prepared. Costs were revised based on the increase in ENR CCI for San Francisco from February 2018 to October 2019 (approximately 2.9%) and then converted to a \$/AF unit cost. This unit cost was used to estimate the cost of a 2,745 AFY expansion. Rounded up to the nearest \$10,000.
<i>Well Injection Facilities</i>					
Mobilization and Demobilization	5	%	\$16,983,216	\$ 849,161	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). For budgeting purposes, assumed same as M1W project.
General Site Work and Piping	1	LS	\$1,891,000	\$ 1,891,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). Includes shoring, SWPPP, and traffic control. Costs for items such as paving and site preparation are assumed to be the same as the M1W project, but pipelines are assumed to be smaller as described in Section 3.2 of TM 3.
Injection Well Installation and Testing	5	EA	\$960,000	\$ 4,800,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). Assumes 560-foot borehole and 550-foot deep well. 130-feet of screen.
Production Well Installation and Testing	2	EA	\$620,000	\$ 1,240,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018) and similar recent projects. Assumes 560-foot borehole and 550-foot deep well. 130-feet of screen.
Site Work at Each Well Site	7	EA	\$860,000	\$ 6,020,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). Includes site improvements, well pads and pedestals, well pumps, and site piping. For budgeting purposes, assume same sizes as M1W project
Monitoring Wells	4	EA	\$100,000	\$ 400,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). Assumes 550-foot deep 4-inch monitoring well.
Backflush Basin and Associated Appurtenances	1	LS	\$15,000	\$ 15,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). For budgeting purposes, assume same size as M1W project (125-ft x 125-ft x 5-ft), and cut/fill can be balanced.
Electrical Building and Hydropneumatic Tank	1	LS	\$77,216	\$ 77,216	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). For budgeting purposes, assume same size as M1W project
Electrical, Instrumentation, and Controls for Wells	1	LS	\$2,360,000	\$ 2,360,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). For budgeting purposes, assume same size as M1W project.
Other Site Work (i.e. landscaping, road maintenance during construction, etc.)	1	LS	\$180,000	\$ 180,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). For budgeting purposes, assume same size as M1W project
<i>Purified Recycled Water Pipeline</i>					
Purified Recycled Water Pipeline from AWPf to Injection Wells	23,760	LF	\$250	\$ 5,940,000	Assume 4.5-mile pipeline from AWPf to injection wells. Assumed maximum flow of 2,900 GPM. 16-inch diameter pipeline at \$12/in-diameter foot plus 30% for various appurtenances (\$250/LF). Rounded up to the nearest \$10,000.
<i>Total Direct Costs</i>				\$ 34,702,377	
Contingency on Infrastructure Costs	30	%	\$34,702,377	\$ 10,410,713	Based on a Class 5 level estimate for conceptual cost estimates (AACEI, 2019).
Contingency for Electrical Connection with PG&E at Each Well Site	7	EA	\$200,000	\$ 1,400,000	Assumes \$200,000 per well site for connection and routing power lines to site.
Soft Costs: Planning, Environmental, Permitting, Engineering, Legal, mitigation, etc.	30	%	\$45,113,090	\$ 13,533,927	Assumes 30% of capital costs
Capital Costs Subtotal (rounded up to nearest \$100,000)				\$ 60,100,000	
Annualized over 25 year period at 6% interest				\$ 4,701,426	

Conceptual Cost Estimate
Project M3: Recycled Water Reuse Through Landscape Irrigation and Indirect Potable Reuse
2,400 AFY 180/400 Foot Aquifer Injection Alternative

Description	Quantity	Units	Unit Cost	Total	Basis for Cost
Operating Costs					
Annual Operating Costs for AWPf, Injection wells, and Production Wells	1	LS	\$ 2,400,000	\$ 2,400,000	Costs for operation of a 2,250 AFY expansion were presented in M1W Expansion Memo (M1W, 2018). Operating costs were converted to a \$/AF unit cost and used to estimate the cost of a 2,745 AFY expansion. An additional 5% was also added to account for the operational cost of each new production well. Rounded up to the nearest \$10,000.
Annual Overhead costs for AWPf, Injection wells, and Production Wells	1	LS	\$ 410,000	\$ 410,000	Costs for overhead of a 2,250 AFY expansion were presented in M1W Expansion Memo (M1W, 2018). Operating costs were converted to a \$/AF unit cost and used to estimate the cost of a 2,745 AFY expansion. An additional 5% was also added to account for the overhead cost of each new production well. Rounded up to the nearest \$10,000.
Annual Energy Costs for Production Wells	1	LS	\$ 300,000	\$ 300,000	Energy costs are based on 200 HP pumps and an electricity price of \$0.185/KWH. Energy costs for AWPf and injection wells are included in operating costs listed above. Rounded up to the nearest \$10,000.
Annual Operating and Overhead Cost Subtotal				\$ 3,110,000	

Total Costs		
Total Annualized Cost		\$ 7,820,000 per year over 25 years. Rounded up to nearest \$10,000
Total 30-Year Average Cost Per Acre-Foot (2,400 AFY)		\$ 3,300 per acre-foot. Rounded up to nearest \$100

Abbreviations:

AFY: acre feet per year	gpm: gallons per minute	MCWD: Marina Coast Water District
AWPF: advanced water purification facility	LF: lineal foot	
EA: each	LS: lump sum	
ENR CCI: Engineering News-Record Construction Cost Index	M1W: Monterey One Water	

Notes

(a) Increase for general conditions, contractor overhead and profit, and sales tax are included in capital unit costs and thus are not added separately.

References

AACEI, 2019. *Recommended Practices and Standards* , Association for the Advancement of Cost Engineering International, March 2019 Update.

M1W, 2018, *Progress Report on Pure Water Monterey Expansion*, Monterey One Water, 10 May 2018.

Nellor et al, 2019, *Final Engineering Report, Pure Water Monterey Groundwater Replenishment Project* , Nellor Environmental Associates, Trussell Technologies, and Todd Groundwater, April 2019

SCI, 2018. *Schedule of Values for Pure Water Monterey, Injection Wells Ph2* , SCI Specialty Construction, May 2018.

Conceptual Cost Estimate
Project M3: Recycled Water Reuse Through Landscape Irrigation and Indirect Potable Reuse
2,400 AFY Deep Aquifer Injection Alternative

Description	Quantity	Units	Unit Cost	Total	Basis for Cost
Capital Costs (a)					
<i>AWPF Facility Expansion</i>					
AWPF Expansion Construction Cost	1	LS	\$10,930,000	\$ 10,930,000	Costs for a 2,250 AFY expansion were presented in M1W Expansion Memo (M1W, 2018) based on a 30% design that was prepared. Costs were revised based on the increase in ENR CCI for San Francisco from February 2018 to October 2019 (approximately 2.9%) and then converted to a \$/AF unit cost. This unit cost was used to estimate the cost of a 2,745 AFY expansion. Rounded up to the nearest \$10,000.
<i>Well Injection Facilities</i>					
Mobilization and Demobilization	5	%	\$21,933,216	\$ 1,096,661	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). For budgeting purposes, assumed same as M1W project.
General Site Work and Piping	1	LS	\$1,421,000	\$ 1,421,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). Includes shoring, SWPPP, and traffic control.
Injection Well Installation and Testing	5	EA	\$2,130,000	\$ 10,650,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). Assumes 1,510-foot borehole and 1,500-foot deep well. 270-feet of screen.
Production Well Installation and Testing	1	EA	\$1,270,000	\$ 1,270,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018) and similar recent projects. Assumes 1,510-foot borehole and 1,500-foot deep well. 130-feet of screen.
Site Work at Each Well Site	6	EA	\$860,000	\$ 5,160,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). Includes site improvements, well pads and pedestals, well pumps, and site piping. For budgeting purposes, assume same sizes as M1W project
Monitoring Wells	4	EA	\$200,000	\$ 800,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). Assumes 1,500-foot deep 4-inch monitoring well.
Backflush Basin and Associated Appurtenances	1	LS	\$15,000	\$ 15,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). For budgeting purposes, assume same size as M1W project (125-ft x 125-ft x 5-ft), and cut/fill can be balanced.
Electrical Building and Hydropneumatic Tank	1	LS	\$77,216	\$ 77,216	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). For budgeting purposes, assume same size as M1W project
Electrical, Instrumentation, and Controls for Wells	1	LS	\$2,360,000	\$ 2,360,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). Reduced by 40% due to half as many wells and one-quarter as many monitoring wells.
Other Site Work (i.e. landscaping, road maintenance during construction, etc.)	1	LS	\$180,000	\$ 180,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). For budgeting purposes, assume same size as M1W project
<i>Purified Recycled Water Pipeline</i>					
Purified Recycled Water Pipeline from AWPf to Injection Wells	18480	LF	\$250	\$ 4,620,000	Assume 3.5-mile pipeline from AWPf to injection wells. Assumed maximum flow of 2,900 GPM. 16-inch diameter pipeline at \$12/in-diameter foot plus 30% for various appurtenances (\$250/LF). Rounded up to the nearest \$10,000.
<i>Total Direct Costs</i>				\$ 38,579,877	
Contingency on Infrastructure Costs	30	%	\$38,579,877	\$ 11,573,963	Based on a Class 5 level estimate for conceptual cost estimates (AACEI, 2019).
Contingency for Electrical Connection with PG&E at Each Well Site	6	EA	\$200,000	\$ 1,200,000	Assumes \$200,000 per well site for connection and routing power lines to site.
Soft Costs: Planning, Environmental, Permitting, Engineering, Legal, mitigation, etc.	30	%	\$50,153,840	\$ 15,046,152	Assumes 30% of capital costs
Capital Costs Subtotal (rounded up to nearest \$100,000)				\$ 66,400,000	
Annualized over 25 year period at 6% interest				\$ 5,194,254	

Conceptual Cost Estimate
Project M3: Recycled Water Reuse Through Landscape Irrigation and Indirect Potable Reuse
2,400 AFY Deep Aquifer Injection Alternative

Description	Quantity	Units	Unit Cost	Total	Basis for Cost
Operating Costs					
Annual Operating Costs for AWPf, Injection wells, and Production Wells	1	LS	\$ 2,400,000	\$ 2,400,000	Costs for operation of a 2,250 AFY expansion were presented in M1W Expansion Memo (M1W, 2018). Operating costs were converted to a \$/AF unit cost and used to estimate the cost of a 2,145 AFY expansion. An additional 5% was also added to account for the operational cost of each new production well. Rounded up to the nearest \$10,000.
Annual Overhead costs for AWPf, Injection wells, and Production Wells	1	LS	\$ 410,000	\$ 410,000	Costs for overhead of a 2,250 AFY expansion were presented in M1W Expansion Memo (M1W, 2018). Operating costs were converted to a \$/AF unit cost and used to estimate the cost of a 2,145 AFY expansion. An additional 5% was also added to account for the overhead cost of each new production well. Rounded up to the nearest \$10,000.
Annual Energy Costs for Production Wells	1	LS	\$ 370,000	\$ 370,000	Energy costs are based on 250 HP pumps and an electricity price of \$0.185/KWH. Energy costs for AWPf and injection wells are included in operating costs listed above.
Annual Operating and Overhead Cost Subtotal				\$ 3,180,000	

Total Costs		
Total Annualized Cost		\$ 8,380,000 per year over 25 years. Rounded up to nearest \$10,000
Total 30-Year Average Cost Per Acre-Foot (2,400 AFY)		\$ 3,500 per acre-foot. Rounded up to nearest \$100

Abbreviations:

AFY: acre feet per year	gpm: gallons per minute	MCWD: Marina Coast Water District
AWPF: advanced water purification facility	LF: lineal foot	
EA: each	LS: lump sum	
ENR CCI: Engineering News-Record Construction Cost Index	M1W: Monterey One Water	

Notes

(a) Increase for general conditions, contractor overhead and profit, and sales tax are included in capital unit costs and thus are not added separately.

References

AACEI, 2019. *Recommended Practices and Standards* , Association for the Advancement of Cost Engineering International, March 2019 Update.

M1W, 2018, *Progress Report on Pure Water Monterey Expansion*, Monterey One Water, 10 May 2018.

Nellor et al, 2019, *Final Engineering Report, Pure Water Monterey Groundwater Replenishment Project* , Nellor Environmental Associates, Trussell Technologies, and Todd Groundwater, April 2019

SCI, 2018. *Schedule of Values for Pure Water Monterey, Injection Wells Ph2* , SCI Specialty Construction, May 2018.

M4 - Monitoring Well(s)

Conceptual Cost Estimate
Project M4: Drill and Construct Monitoring Wells

Description	Quantity	Units	Unit Cost	Total	Basis for Cost
Capital Costs (a)					
400-Foot Aquifer Monitoring Wells	2	EA	\$100,000	\$ 200,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). Assumes 550-foot deep 4-inch monitoring well.
Deep Aquifer Monitoring Wells	1	EA	\$200,000	\$ 200,000	Based on Pure Water Monterey Winning Bid Schedule (SCI, 2018). Assumes 1,500-foot deep 4-inch monitoring well.
<i>Total Direct Costs</i>				<i>\$ 400,000</i>	
Contingency on Infrastructure Costs	30	%	\$400,000	\$ 120,000	Based on a Class 5 level estimate for conceptual cost estimates (ACEI, 2019).
Geochemical Analysis of the Deep Aquifers	1	LS	\$250,000	\$ 250,000	Based on cost estimates for similar projects
Soft Costs: Planning, Permitting, Engineering, Legal, mitigation, etc.	30	%	\$770,000	\$ 231,000	Assumes 30% of capital costs
Capital Costs Subtotal (rounded up to nearest \$100,000)				\$ 1,100,000	

Abbreviations:
AFY: acre feet per year
EA: each
LS: lump sum
MCWD: Marina Coast Water District

Notes
(a) Increase for general conditions, contractor overhead and profit, and sales tax are included in capital unit costs and thus are not added separately.

References
ACEI, 2019. *Recommended Practices and Standards* , Association for the Advancement of Cost Engineering International, March 2019 Update.
SCI, 2018. *Schedule of Values for Pure Water Monterey, Injection Wells Ph2* , SCI Specialty Construction, May 2018.

C2 - Check Dams

Capital and Annualized Costs
Corral de Tierra - Project 3, Check Dams Along Streams
(Preliminary Opinion of Probable Cost)

Line No.	Description		Units		Total
1	Project Yield		acre-feet per year		150
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		\$		\$5,143,000
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		\$		\$402,300
7	Annual O&M Cost		\$		\$22,000
8	Total Annualized Cost		\$		\$424,300
9	Unit Cost		\$/AFY		\$2,830
CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	Mobilization/Demobilization	1	LS	\$110,000	\$110,000
11	Environmental and Stormwater	1	LS	\$319,000	\$319,000
11	Earthwork/Site Preparation	1	LS	\$379,000	\$379,000
12	Channel Erosion Control Lining	1	LS	\$57,000	\$57,000
13	Rubber Dam	1	LS	\$1,060,000	\$1,060,000
14	Check Dam Support Building	625	SF	\$150	\$93,750
15	Electrical, I&C	1	LS	\$288,000	\$288,000
16	Land Acquisiton	10	AC	\$64,000	\$640,000
17	<i>Subtotal</i>				\$2,946,750
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
18	Plumbing Appurtenance Contingency			30%	\$346,000
19	General Conditions			15%	\$442,000
20	Contractor Overhead and Profit			15%	\$442,000
21	Sales Tax			9.25%	\$81,800
22	Engineering, Legal, Admininstrative, Contingencies			30%	\$884,000
23	Total Capital Cost				\$5,143,000
OPERATIONS AND MAINTENANCE					
Line No.	Description	Quantity	Unit	Unit Cost	Total Cost
24	Power	1	LS	\$600	\$600
25	Labor	1	LS	\$9,600	\$9,600
26	Equipment Repair & Replacement	1	LS	\$5,200	\$5,200
27	Miscellaneous Allowance	1	LS	\$1,100	\$1,100
28	Contingency			30%	\$5,000
29	Total O&M Cost				\$22,000

NOTES:

1. "Project Yield" based on: Assumed recharge of 150 AFY equivalent to 60% of the runoff volume from a 2-year, 24-hour event.
2. "Facility Life" selected based on 25-yr anticipated life of facilities.
3. "Interest Rate" selected within expected range for public-financing options.
4. "Capital Cost" excludes additional treatment costs.
5. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate.
6. "Annualized Capital Cost" based on facility life and interest rate.

C3 - Recharge from Surface Water DiversionS

Capital and Annualized Costs
Corral de Tierra - Project 1, Creek Diversion and Recharge
(Preliminary Opinion of Probable Cost)

Line No.	Description		Units		Total
1	Project Yield		acre-feet per year		160
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		\$		\$5,950,000
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		\$		\$465,500
7	Annual O&M Cost		\$		\$26,000
8	Total Annualized Cost		\$		\$491,500
9	Unit Cost		\$/AF		\$3,070
CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	Mobilization/Demobilization	1	LS	\$113,000	\$113,000
11	Environmental and Stormwater	1	LS	\$327,000	\$327,000
11	Earthwork/Site Preparation	1	LS	\$59,000	\$59,000
12	Diversion Structure	1	LS	\$140,000	\$140,000
13	Pipeline	3200	LF	\$250	\$800,000
14	Storage Basin (10 AF)	0	LS	\$177,000	\$0
15	Pump Station	1	LS	\$648,000	\$648,000
16	Equipment and Control Building	625	SF	\$150	\$93,750
17	Injection and Monitoring Wells	0	LS	\$2,051,000	\$0
18	Electrical, I&C	1	LS	\$185,000	\$185,000
19	Land Acquisition	15.7	AC	\$64,000	\$1,004,800
20	<i>Subtotal</i>				\$3,370,550
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
21	Plumbing Appurtenance Contingency			30%	\$463,000
22	General Conditions			15%	\$506,000
23	Contractor Overhead and Profit			15%	\$506,000
24	Sales Tax			9.25%	\$93,500
25	Engineering, Legal, Administrative, Contingencies			30%	\$1,011,000
26	Total Capital Cost				\$5,950,000
OPERATIONS AND MAINTENANCE					
Line No.	Description	Quantity	Unit	Unit Cost	Total Cost
27	Power	1	LS	\$6,700	\$6,700
28	Labor (Diversion Facilities, Basin)	1	LS	\$3,200	\$3,200
29	Equipment Repair & Replacement	1	LS	\$4,000	\$4,000
30	Miscellaneous Allowance	1	LS	\$6,100	\$6,100
31	Contingency			30%	\$6,000
32	Total O&M Cost				\$26,000

NOTES:

1. "Project Yield" based on: Analysis of USGS Gage Station 11152540 using the CA SWRCB's 90th Percentile/20% Method and applying a 0.67 reduction factor for the assumed, upstream diversion site.
2. "Facility Life" selected based on 25-yr anticipated life of facilities.
3. "Interest Rate" selected within expected range for public-financing options.
4. "Capital Cost" excludes additional treatment costs.
5. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate.
6. "Annualized Capital Cost" based on facility life and interest rate.

C4 - Wastewater Recycling for Reuse

Capital and Annualized Costs
Monterey Basin - Project No. 8, Toro Park Water Reclamation
(Preliminary Opinion of Probable Cost)

Line No.	Description		Units		Total
1	Project Yield		acre-feet per year		232
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		\$		\$28,635,000
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		\$		\$2,240,100
7	Annual O&M Cost		\$		\$486,000
8	Total Annualized Cost		\$		\$2,726,100
9	Unit Cost		\$/AF		\$11,750
CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	Mobilization/Demobilization	1	LS	\$719,000	\$719,000
11	Environmental and Stormwater	1	LS	\$1,307,000	\$1,307,000
12	Tertiary Treatment Plant	1	LS	\$4,351,000	\$4,351,000
13	Reclaimed Water Lift Station	1	LS	\$345,000	\$345,000
14	Treated Water Storage Tank	1	EA	\$450,000	\$450,000
15	Pipeline	30,900	LF	\$250	\$7,725,000
16	Electrical, I&C	1	LS	\$199,000	\$199,000
17	Land Acquisition/Easements	1	LS	\$211,000	\$211,000
18	<i>Subtotal</i>				\$15,307,000
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
19	Plumbing Appurtenance Contingency			30%	\$3,861,000
20	General Conditions			15%	\$2,296,000
21	Contractor Overhead and Profit			15%	\$2,296,000
22	Sales Tax			9.25%	\$283,200
23	Engineering, Legal, Administrative, Contingencies			30%	\$4,592,000
24	Total Capital Cost				\$28,635,000
OPERATIONS AND MAINTENANCE					
Line No.	Description	Quantity	Unit	Unit Cost	Total Cost
25	Power	1	LS	\$21,400	\$21,400
26	Tertiary Plant Operations	1	LS	\$30,300	\$30,300
27	Labor (Tank, Pipeline, Pump Stations)	1	LS	\$288,000	\$288,000
28	Equipment Repair & Replacement	1	LS	\$34,000	\$34,000
29	Contingency			30%	\$112,100
30	Total O&M Cost				\$486,000

NOTES:

1. "Project Yield" based on: Beneficial reuse of treated wastewater flows to Toro Park WWTP, estimated at 232 AFY in Wallace Group memorandum, *Corral De Tierra Subarea Water and Wastewater Usage Analysis* (March 2021).
2. "Facility Life" selected based on 25-yr anticipated life of facilities.
3. "Interest Rate" selected within expected range for public-financing options.
4. "Capital Cost" excludes additional treatment costs.
5. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate.
6. "Annualized Capital Cost" based on facility life and interest rate.

**C7 - Increase Groundwater Production in the Upper Corral de Tierra Valley for Distribution to
Lower Corral de Tierra Valley (Artesian Well)**

Capital and Annualized Costs
Corral de Tierra - Project 2, Upper Corral de Tierra Artesian Well and Lower Corral de Tierra Recharge
(Preliminary Opinion of Probable Cost)

Line No.	Description		Units		Total
1	Project Yield		acre-feet per year		160
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		\$		\$13,275,000
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		\$		\$1,038,500
7	Annual O&M Cost		\$		\$9,000
8	Total Annualized Cost		\$		\$1,047,500
9	Unit Cost		\$/AFY		\$6,550
CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	Mobilization/Demobilization	1	LS	\$297,000	\$297,000
11	Environmental and Stormwater	1	LS	\$863,000	\$863,000
11	Earthwork/Site Preparation	1	LS	\$19,000	\$19,000
12	Recharge Basin Inlet Structure	1	LS	\$16,000	\$16,000
13	Pipeline	20500	LF	\$225	\$4,612,500
14	Extraction Well	1	LS	\$207,000	\$207,000
15	Surge Tank	1	LS	\$137,000	\$137,000
16	Electrical, I&C	1	LS	\$86,000	\$86,000
17	Land Acquisiton	15.7	AC	\$64,000	\$1,004,800
18	<i>Subtotal</i>				\$7,242,300
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
19	Plumbing Appurtenance Contingency			30%	\$1,487,000
20	General Conditions			15%	\$1,086,000
21	Contractor Overhead and Profit			15%	\$1,086,000
22	Sales Tax			9.25%	\$201,000
23	Engineering, Legal, Admininstrative, Contingencies			30%	\$2,173,000
24	Total Capital Cost				\$13,275,000
OPERATIONS AND MAINTENANCE					
Line No.	Description	Quantity	Unit	Unit Cost	Total Cost
25	Power	1	LS	\$0	\$0
26	Labor (Well Facility, Recharge Basin)	1	LS	\$4,000	\$4,000
27	Equipment Repair & Replacement	1	LS	\$2,500	\$2,500
28	Miscellaneous Allowance	1	LS	\$500	\$500
29	Contingency			30%	\$2,100
30	Total O&M Cost				\$9,000

NOTES:

1. "Project Yield" based on: 100 gpm well capacity producing a mean of 160 AFY.
2. "Facility Life" selected based on 25-yr anticipated life of facilities.
3. "Interest Rate" selected within expected range for public-financing options.
4. "Capital Cost" excludes additional treatment costs.
5. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate.
6. "Annualized Capital Cost" based on facility life and interest rate.